

RASHTRAPATI BHAVAN LIBRARY



Reg. No. 708 वीखखीव

Clas. No. VIII - 0

HISTORY OF THE GREAT WAR
MILITARY OPERATIONS



MACMILLAN AND CO., LIMITED
LONDON • BOMBAY • CALCUTTA • MADRAS
MELBOURNE

THE MACMILLAN COMPANY
NEW YORK • BOSTON • CHICAGO
DALLAS • ATLANTA • SAN FRANCISCO

THE MACMILLAN COMPANY
OF CANADA, LIMITED
TORONTO

HISTORY OF THE GREAT WAR

BASED ON OFFICIAL DOCUMENTS

BY DIRECTION OF THE HISTORICAL SECTION OF THE
COMMITTEE OF IMPERIAL DEFENCE

MILITARY OPERATIONS

FRANCE AND BELGIUM, 1916

SIR DOUGLAS HAIG'S COMMAND TO THE 1ST JULY: BATTLE OF THE SOMME

APPENDICES

MACMILLAN AND CO., LIMITED
ST. MARTIN'S STREET, LONDON

1932

COPYRIGHT

PRINTED IN GREAT BRITAIN
BY R. & R. CLARK, LIMITED, EDINBURGH

PREFACE

THE documents in this volume have reference to the Allied plans of campaign for 1916; the plan and preparations for the Somme offensive, including the tactical instructions; specimen orders for a raid, and for a small operation; and some of the corps, divisional, infantry brigade and artillery instructions and orders issued at the Somme for the operations of the 1st July 1916.

NOTE.—The method of reading the map co-ordinates used in the orders in 1916 is explained in the margin of the squared Map 1A.

TABLE OF APPENDICES

	PAGE
1. Plan of Action proposed by France to the Coalition. Memorandum laid before the Second Allied Military Conference at Chantilly, 6th December 1915. (Translation)	1
2. Paper by the General Staff on the Future Conduct of the War, 16th December 1915. (Signed by Lieut.-General Sir Archibald Murray, Chief of the Imperial General Staff. Copy as revised 17th December 1915)	6
3. Note for the War Committee by the Chief of the Imperial General Staff with reference to the General Staff Paper dated 16th December 1915. (Signed by General Sir William Robertson, Chief of the Imperial General Staff, 23rd December 1915)	28
4. Future Military Operations. Paper submitted to the War Committee by the Chief of the Imperial General Staff, 31st March 1916. (Signed by General Sir William Robertson, Chief of the Imperial General Staff)	30
5. Instructions for General Sir D. Haig, G.C.B., K.C.I.E., K.C.V.O., Commanding the Expeditionary Force in France. (Signed by the Secretary of State for War, Field-Marshal Earl Kitchener, 28th December 1915)	40
6. Organization and Execution of a Raid. (5th and 7th Canadian Battalions, 16th/17th November 1915)	42
7. Orders for a small Operation. (36th Infantry Brigade, 1st March 1916)	49
8. The Somme. Plan for Offensive by the Fourth Army submitted to G.H.Q. 3rd April 1916	64
9. The Somme. G.H.Q. Letters O.A.D. 710 and 710/1 to General Sir H. Rawlinson, 12th April 1916, with reference to the Fourth Army Plan	72
10. The Somme. Amended Plan submitted by the Fourth Army to G.H.Q. 19th April 1916	76
11. The Somme. G.H.Q. Letter O.A.D. 876 to General Sir H. Rawlinson, 16th May 1916, with reference to the Fourth Army Plan	83
12. The Somme. G.H.Q. Letter O.A.D. 912 to General Sir H. Rawlinson, 27th May 1916, with General Instructions as to the Preparation for the Battle	84
13. The Somme. G.H.Q. Letter O.A.D. 12 to General Sir H. Rawlinson, 16th June 1916, stating the Objectives	86

	PAGE
14. The Somme. G.H.Q. Letter O.A.D. 15 to General Sir H. Rawlinson, 20th June 1916, with regard to shortening the bombardment	88
15. The Somme. Note O.A.D. 17, dated 21st June 1916, of Commander-in-Chief's instructions in amplification of O.A.D. 12 issued 16th June 1916 (Appendix 13)	89
16. Preparatory Measures to be taken by Armies and Corps before undertaking Offensive Operations on a large scale, with appendices. Issued by the General Staff G.H.Q. (O.B. 1207, 2nd February 1916)	91
17. Training of Divisions for Offensive Action. Issued by the General Staff G.H.Q., SS. 109, 8th May 1916	125
18. Fourth Army. Tactical Notes, May 1916	131
19. The Somme. Fourth Army Artillery Programme of Preliminary Bombardment ¹	148
20. The Somme. Fourth Army Memorandum of 28th June 1916 with regard to action to be taken if the enemy's resistance breaks down	150
21. The Somme, 1st July. XIII. Corps Plan of Operations	152
22. The Somme, 1st July. XIII. Corps Operation Order No. 14 of 23rd June 1916	182
23. The Somme, 1st July. XV. Corps :	
(1) Instructions for a preliminary bombardment	184
(2) Instructions for a concentrated bombardment	188
24. The Somme, 1st July. 30th Division Operation Order No. 19 of 21st June 1916	191
25. The Somme, 1st July. 7th Division :	
(1) Artillery instructions for forthcoming operations	213
(2) Artillery Operation Order No. 12 of 28th June 1916	220
26. The Somme, 1st July. 20th Infantry Brigade. Instructions for forthcoming operations, dated 17th June 1916	222

¹ The Fourth Army Operation Orders are in the text volume.

PLAN OF ACTION PROPOSED BY FRANCE TO THE COALITION

MEMORANDUM LAID BEFORE THE SECOND ALLIED MILITARY CONFERENCE AT CHANTILLY, 6TH DECEMBER 1915 (*Translation*)

After the comparative failure of the operations against France and Russia, Germany, covered in the West by her main Armies and a powerful defensive system, and on the Russian front by similar dispositions of less strength, is employing in the East such forces as she still has at her disposal.

The aims of the enemy in this new phase of the war are easy to understand :

1. To husband his resources in men, and by slowing down the process of attrition, to be in a condition to continue the struggle indefinitely : a policy made possible by the intervention of new allies, and by the intensive employment of those he already possesses.

In attracting its forces to secondary theatres by threats at particularly vulnerable points, to decentralize the efforts of the Coalition.

2. To pursue the realization of the German imperial idea contained in the phrase "*Drang nach Osten*" so as to increase his world prestige, raise the morale of his own people, and acquire so strong a position in the East that, whatever the issue of the struggle, he could not be forced to surrender it.

If we adopt the least favourable view, the war may last long enough to enable Germany to realize this plan, the success of which would give her considerable moral and material advantages, constituting an insurance against final defeat.

To oppose Germany's aims we consider that the Coalition ought :

1. Pursue its principal objective : the destruction of the German and Austrian Armies.

2. Foil Germany's attempt at imperial domination in the East.

1. *Principal Objective*

There must be no indecision regarding the means by which the first of these objectives is to be achieved.

The Allied armies ought to resume the general offensive on the Franco-British, Italian and Russian fronts as soon as they are in a state to do so.

All the efforts of the Coalition must be exerted in the preparation and execution of this decisive action, which will only produce its full effect as a *co-ordination of offensives*.

It must be borne in mind that an offensive by our troops in France would now be a very considerable undertaking, owing to the large forces of the enemy opposed to us. This operation would be facilitated if a Russian attack in force caused the Germans to move troops from the Western Front.

Conversely, if Franco-British demonstrations, judiciously carried out, succeed in pinning to their ground the whole of the forces opposed to us, the field will be clear for the reorganized Russian Armies.

Suppose, on the other hand, that there is no co-ordination of effort. In the present situation the Germans are able to add 10 divisions, no longer required in Serbia, to their forces in reserve—about 12 divisions—on the French front. Combined with the troops which could with safety be withdrawn from the Russian front, a mass of 25 to 30 divisions could be assembled. If the enemy is permitted to carry out these movements, he will employ this force, acting on interior lines, on each front in succession.

We consider that, to be successful, our offensive should take place at almost the same time on both fronts—a few weeks hence.

On this point we ask the opinions of the members of the Conference.

When they resume the offensive the Allied Armies will have to overcome the difficult problem of breaking through the fortified positions which confront them on both fronts. This problem is not the same in both cases.

On the Western Front the enemy has developed and strengthened for more than a year past the strongest possible defensive system, held by very strong forces (110 divisions, all German). In Russia he occupies lines of vast extent, weakly held, which are probably not so strong owing to lack of time and means to make them so.

In these conditions, it seems that a breach in the German lines on the Russian front could now be easily converted into a strategic "break-through", leading to the disorganization and retreat of the enemy Armies.

From what we know of the conditions of the Allied Armies, they are not ready now to undertake the co-ordinated action which we judge necessary in order to bring about a decision.

It is therefore necessary for each of the Powers to combine their means and increase their resources, pursuing meanwhile an energetic policy of wearing down the opposing forces.

In conclusion, so far as the principal theatres of war are concerned, the Allies must adopt the following policy until such time as it is possible to launch the combined offensive.

Great Britain, Italy and Russia should use every endeavour to wear down their opponents. France will co-operate so far as her resources in man power permit.

France, Great Britain and Italy should complete their organization and equipment and also supply Russia with the material she lacks, so that the Russian Armies may be raised to their full offensive value as soon as possible.

2. Secondary Objectives

For a long time the Quadruple Entente has realized that in its own interest Germany's policy of Eastern domination must be

checked. It has therefore endeavoured to bar the way to German expansion in the East.

(a) The first attempt was made on Constantinople itself, and success would have had important results, detaching Turkey from the Central Empires. At all events, the latter would have found themselves unable to develop their Eastern policy.

Unfortunately the expedition did not achieve the hoped-for result. We can only admit the failure and the impossibility of making a further effort in that direction.

(b) The second attempt was made in the Balkan peninsula, and is in course of execution.

Hesitations and delays have resulted in a situation much less favourable to the Quadruple Entente than would have resulted from more decisive action.

The Serbian Army has been driven into the mountains of Montenegro and Albania, and our expeditionary force has begun to retreat towards the Greek frontier.

Faced by this momentary failure, ought we to consider the game lost, give up the plan and abandon Salonika? This solution should be rejected for the following reasons:

1. The diversity of interests involved may lead at any moment to a change of the Balkan situation in our favour. We must be in a position to profit by it.

As regards Greece, the presence of our expeditionary force, combined with the action of our fleet, constitutes a powerful influence which has already had a salutary effect. So long as we maintain ourselves in Greek territory, we shall be able to take advantage of the changes in the political situation of that country, and perhaps to overcome her pusillanimity.

As for Rumania, Germany has begun to bring great pressure to bear on her with a view to securing her economic, and perhaps military, support.

Encouraged by our presence in Salonika, and by the concentration of the Russian Army in Bessarabia, Rumania seems little disposed to yield to German demands. Indeed, there seems to be a revival of feeling in our favour at Bucharest. It is expedient to study events in this quarter. In order to keep Rumania detached from Germany, the Coalition must take the appropriate economic measures which are examined in a special appendix.

It is for Russia to take military action, either by the direct support of her Army in Bessarabia, or by vigorous attacks upon the Austrians in Galicia; or even by a vigorous attack upon Bulgaria across Rumanian territory.

It is obvious that the Franco-British forces at Salonika are advantageously situated to facilitate Russian military action; for, so long as Bulgaria feels the threat of the Allies to her flank and rear, she will not be able to engage all her forces against Rumania; nor will a German winter campaign against southern Russia be possible.

The field will remain open for secret diplomatic action to influence Tzar Ferdinand, who, according to certain information, is impatient of German tutelage.

3.¹ We are in favour of increased Italian efforts on the Albanian

¹ No paragraph is numbered 2 in the original.

coast. It ought to be possible to reassemble the Serbian Army when it arrives on the Adriatic coast, and to reorganize it.

4. Finally, we should prevent the Central Empires from controlling Greece, either by force or persuasion, and so utilizing all the Greek ports and islands as bases for the maintenance of submarines, which would soon wrest from us our control of the Mediterranean Sea.

For all the above reasons the Quadruple Entente should remain in the region of Salonika, and wait upon events, directing them, if possible, to conform to its interests and ready to profit by them.

If, as a result of her consolidated position in southern Serbia, or in Greece, and in Albania, the Quadruple Entente succeeds in attracting to its side Rumania and Greece, there is no doubt that the Balkan situation in the following spring would be most favourable, and would permit of a complete check to all German enterprises in the East.

On the contrary, if events do not take a favourable course, and if the presence of our expeditionary force at Salonika becomes useless, we shall have to go further afield in order to block the path of German imperialism. At that moment, but only at that moment, we should evacuate Salonika, and consider the opportunity of arresting enemy progress in the direction of Egypt.

(c) In the present situation the presence of our forces at Salonika is sufficient to bar the way to German enterprise in the East.

The Germans have displayed an intention to threaten Egypt, and, though it is impossible to estimate the precise importance of this intention, it must not be overlooked.

In any case, the Allies ought to take all necessary steps to counter this threat. Egypt must be put in a proper state of defence and troops sent there.

But we cannot disperse our forces in a series of divergent operations without playing into the enemy's hands. In principle, the troops actually in the East should suffice for this secondary theatre.

In order to ensure the defence of Egypt in an economical way, it will be necessary to draw for troops upon one of our expeditionary forces which, for the reasons indicated above, can only be that at Gallipoli.

Consequently, we foresee the evacuation of the peninsula and the transfer of the British troops there to Egypt.

Moreover, the situation of the expeditionary force at Gallipoli presents no prospect of improvement. It may even become critical now that the Turks are supplied by the Germans with munitions and material of all kinds. The most experienced officers on the spot are of opinion that evacuation will be forced upon us when the enemy makes a properly mounted attack on our positions. It is better to bow to the inevitable and withdraw our troops before they are closely invested. We propose, from this moment, the total evacuation of the peninsula, to be carried out progressively.

The British forces on the peninsula will be sent to Egypt for rest and reorganization.

The defence of Egypt will be assured by these troops, and by a powerful defensive system to be organized immediately east of the Suez Canal.

To recapitulate, we propose that the Coalition adopt the following plan :

A. In the Principal Theatres :

1. Great Britain, France, Italy and Russia will deliver simultaneous attacks with their maximum forces on their respective fronts as soon as they are ready to do so and circumstances seem favourable. This is our essential aim, the principal means by which we expect to force a decision.
2. Until this can be done, the Austro-German forces will be worn down by vigorous action, to be carried out principally by those Powers which still have reserves of man power. (Great Britain, Italy and Russia).
3. Each of the Powers will unceasingly continue to accumulate material and equipment. Russia and Serbia will be helped by their Allies to reorganize their armies in this respect.

B. In the Secondary Theatres :

The Allies will allot to the secondary theatres only the minimum forces required—in principle, those which are already in the East—and will use them to bar the way to German expansion, conforming to the programme given below. One commander-in-chief for all the Allied forces in the East will be charged with its execution :

1. The Coalition will first try to establish in the Balkans the effective barrier which they failed to form at Constantinople. With this object it is necessary :

(a) To continue in occupation of the Salonika region, in default of southern Serbia (Franco-British Expeditionary Force, remnants of Serbian army).

(b) To occupy Albania in force (Italy), to reassemble and reorganize the Serbian army.

(c) To continue pressure on Greece (France, Great Britain, Italy), in order to obtain the maximum co-operation from her, and to organize on her coasts operations against enemy submarines.

(d) To take economic and military action (Coalition and Russia) to keep Rumania free from German control.

(e) To follow closely the trend of events in the Balkans and profit by all opportunities to bring neutrals over to our side, and take advantage of changes which are always possible in view of the diverse interests at stake.

2. At the same time, the Coalition must provide for the adequate defence of Egypt. With this object it is necessary :

(a) To evacuate Gallipoli by degrees and send the British troops thus relieved to Egypt for rest and reorganization.

(b) To create a strong defensive system east of the Suez Canal.

C. Economic War :

The economic war will be organized and carried out to its fullest extent, the necessary steps being taken at once by common Allied agreement.

PAPER BY THE GENERAL STAFF ON THE
FUTURE CONDUCT OF THE WAR
16TH DECEMBER 1915

(Marked "Copy as revised on 17th December")

AN EXAMINATION BY THE GENERAL STAFF INTO THE
FACTORS AFFECTING THE CHOICE OF A PLAN OF
CAMPAIGN; TOGETHER WITH A RECOMMENDATION
AS TO THE BEST PLAN TO ADOPT.

The problem has been carefully studied in all its military aspects. As it would be impossible in a short paper to enter fully into all the complicated factors affecting the decision as to the best plan to adopt, the conclusions arrived at are compressed in this paper into the form of a brief summary of the main arguments and of the deductions drawn from them, followed by an outline of the course recommended.

SECTION 1.—GENERAL CONSIDERATIONS AS TO OFFENSIVE
POSSIBILITIES FOR THE ALLIES.

1. The offensive power of the Austro-Germans is still a danger to be seriously reckoned with. From highest to lowest they are imbued with the offensive spirit and with the belief that the only way to victory lies in the destruction of the enemy's armed forces. If they cannot find an opening for a decisive blow at one time, they will strive to make an opening at a future time. They will never lose sight of that object and their plans will always be directed towards such a blow as will give promise of quick and decisive success. They will therefore seek to deliver it against a main force in a decisive theatre.

2. The excellent interior communications in the hands of the enemy facilitate the application of the system of war on which he relies. He can mass troops on any of his fronts and move them from one front to another far more rapidly and securely than we can.

3. Large Allied forces cannot be removed from existing fronts in France or Russia, to conduct a campaign elsewhere, without the enemy's knowledge. Consequently, with his superior communica-

tions, their removal to a new theatre would enable him either to launch an attack against the front so weakened, or to transfer an equivalent force from that front in ample time to meet the new attack.

If he should decide on the latter alternative, he could either attack our troops with superior numbers while they were in the early stages of developing the fresh attack, or he could take up a fortified position on our new line of advance, which position he could make practically as strong as the lines existing in France.

4. If the Allies were strong enough to hold the enemy fast on the existing main fronts and, without taking any considerable force from those fronts, to throw in a large *new* army against the Central Powers elsewhere, the possibility of gaining an advantage by opening a new line of attack would be much increased, provided the transport of a large army to the point of attack were feasible. But it does not follow that, even then, it would be the wisest course. The transport of a great army by sea and its landing, deployment and advance would take so long that the attack could not be developed for months, whereas on the existing fronts the same causes of delay do not exist, and if a successful attack on these fronts is possible very much more rapid results might be gained.

5. There is no chance of any great *new* army being furnished by France, Russia or ourselves during the next six or eight months. France certainly cannot produce it, nor could England, in the time. Russia has the men but not the munitions for such numbers as would be required, and, so far as can be foreseen, such increase as she can produce will continue to be required on her present front. Nor could she transport a great army, even if available, to any point where it could be brought to bear on a new front, within any reasonable time, against the Central Powers.

England's power of transporting troops by sea, and of guarding sea routes, is also limited. Our trade is already seriously affected by the great number of ships taken up, and military calls upon our mercantile marine should, if possible, be decreased, rather than increased. With the ships at present available it would take many months for a great army to be transported by sea to some new theatre, and its maintenance there would present very serious difficulties.

6. So far as operations on any great scale against the armies of the Central Powers are concerned the possibilities open to the Allies are clearly much limited by the considerations stated above, while any offensive on a minor scale against the Central Powers, on an independent line of operations, would almost certainly lead to the detachment employed being held up, sooner or later, by an entrenched position, if not enveloped and destroyed.

7. There are, however, various possibilities to be considered besides those already mentioned. Several British divisions are available outside France. Italy has large forces. Roumania or Greece, or both, may yet join the Allies. The Montenegrins and the remnant of the Serbs are still in being. Out of all this material perhaps a formidable offensive could be built up without exceeding the capacity of our sea transport? These possibilities are discussed in the following paper, but before dealing with them the ground may be further cleared by considering here another point.

8. The arguments given so far refer to an offensive against the armies of the Central Powers, on a new and independent line of operations, which would certainly have no prospects of success unless

very large forces were available. But we must also consider the possibility of an offensive on a new but *not* an independent line, and in close co-operation with larger forces. This might be within the power of the Allies without help from any States at present neutral.

If active co-operation with the Allies on the part of the Balkan States be excluded there are only three such possibilities open to us so long as Holland remains neutral, viz :—

- (a.) A landing on the Belgian coast, to co-operate with the left of the present main Allied line. This has been carefully considered, but it would amount really to part of a scheme for an offensive on the existing front, and not to an independent operation. We are, therefore, not concerned with it here.
- (b.) A landing near the head of the Adriatic to co-operate with and assist an Italian advance across the Isonzo, and then move towards Buda Pesth.

This presents undoubted attractions, but the sea transport and the maintenance of communications across the Adriatic would be very difficult and dangerous, while the landing and subsequent advance would also be so difficult that the chance of pushing far into Austria would be small.

Nevertheless, even a limited measure of success might, by drawing in larger Austrian forces, afford valuable help to offensive operations elsewhere provided it could be gained without weakening the main offensive.

If such an operation were decided on it would apparently be within the power of Italy to undertake it.

- (c.) A landing in Asia Minor, in co-operation with a Russian advance in considerable force through the Caucasus, and also, perhaps, with a Russian landing on the southern shores of the Black Sea.

This last mentioned idea might be attractive to Russia, if she had the men to spare. Moreover, the plan suggested would cover our Eastern possessions. But its chances of any real success against the Turks would be slight unless large numbers of the Turkish forces had been removed well out of reach.

We should have to force a landing in Asia Minor—no easy task unless a complete surprise were gained. Even if we landed about Alexandretta (the point nearest to the Russians in the Caucasus) there would still be some 400 miles of difficult country between us and the Russians. Our army and that of the Russians would, therefore, have to fight their way forward independently to effect a junction. To do this, and to guard our base and line of communications, probably nothing short of a quarter of a million men on our side, and a somewhat similar number of Russians, would have any chance of success. To land and maintain in Asia Minor such a force, with the enormous mass of special transport required, would be an immense undertaking. The preparation of special land transport and equipment would be a long and costly matter. Then the sea transport to Asia Minor and the landing there would take many months, followed by lengthy operations before a junction could be effected. After that an advance of some hundreds of miles towards Constantinople would be necessary to secure decisive results, and strong lines of Turkish entrenchments would certainly have to be carried,

We should be fortunate if we gained decisive results within a year from now, and when we had gained them it would only be against the Turks. Meanwhile, including our troops and Russian troops, some half a million men, plus as many more at least as "wastage", would have been withdrawn from the war against Austro-Germany.

Without going into the naval difficulties involved, it is sufficiently evident that whatever else might be gained by such an operation it would not be likely to give decisive results against the Central Powers; and that must be our primary object.

9. The views of the General Staff on the Dardanelles operations have already been so fully explained that it is not necessary here to do more than touch briefly on that question.

Success in opening the Dardanelles and the Bosphorus would undoubtedly have a great, and a more or less immediate, effect, both direct and indirect, in the main theatre of war and on the Arab and Mahometan worlds. But the General Staff see no sufficient prospects of success at the Dardanelles, with the means now at our disposal, and in view of the lateness of the season, to justify any further offensive efforts there at present.

It is conceivable that conditions might become more favourable after the winter, but in view of various considerations already put forward in this paper, and those explained in subsequent paragraphs, the General Staff see no reason to modify the opinion expressed by them in their paper submitted on the 22nd November, 1915, that the drain on our resources involved in maintaining our positions in Gallipoli throughout the winter is too great for the means at our disposal and would weaken our future efforts to a serious degree.

10. The arguments given above have not entered into the possibilities of decisive success being gained next year by a great offensive in the main theatre. Before discussing that problem, it is advisable to consider the offensive moves open to our enemies, and the defensive measures which it is necessary or advisable for the Allies to take. These, as will appear, have considerable influence on the offensive possibilities open to us.

SECTION 2.—GENERAL DEFENSIVE CONSIDERATIONS, AND DEDUCTIONS THEREFROM AS TO THE NUMBER OF DIVISIONS AVAILABLE FOR OFFENSIVE OPERATIONS.

11. It is certain that the Central Powers are not less anxious than the Entente Powers to find some means of ending the War victoriously in as short a time as possible.

Probably the quickest and most certain decision for the Central Powers would be found in a successful landing in England and the seizure of London, if the difficulties of transporting to our shores the comparatively small force required could be overcome.

Next to that the quickest results of a decisive nature would be gained by a great victory in France and the capture of Paris.

A third possibility of forcing a decision would lie in the complete defeat of the Russian Armies. But the great size of Russia, coupled with the comparative difficulty of communications in that country, and the absence of any centre on which the life of the country depends to the extent that we depend on London and France on Paris, might entail a far greater expenditure of time in bringing

Russia to her knees than would be necessary for the over-running of England and France if their defences were once broken through.

Whatever the comparative attractions of a great offensive against England, France or Russia may be however, the point to note here is that, so long as it is possible for the Central Powers to mass great forces for such an offensive, it is impossible for any of the Entente Powers to weaken their defences to an extent which might result in their being broken through. The same argument applies also in the case of Italy.

12. It is calculated that the two Central Powers have from 4½ to 5 millions of men in the field still, and that they can maintain those numbers for several months yet. Their excellent communications enable them to throw the weight of these great numbers from side to side, *so long as the Allies are incapable of seriously threatening the territory of the Central Powers by a strong and simultaneous offensive.* But the security of their own territories is as important to Germany and Austria as the security of their home territories is to the Allies. Therefore, though up to date the strength of the Allied attacks has proved insufficient to deprive the enemy of the power of moving reinforcements between east and west within the present main theatre of war, he cannot venture to detach largely to any great distance from that theatre so long as there is any serious danger of his home defences being broken through.

Thus, whatever offensive projects may appear worthy of consideration, defensive requirements render it certain that the main armies of all the belligerents will remain on the fronts now occupied ; and owing to the more rapid power of movement of the enemy the Allies are, and will remain, even more tied down in this respect than the Central Powers are. This is generally true of France, Russia and Italy. The problem of the defence of the United Kingdom presents special considerations. A successful attack on England would promise so great and immediate a return for a comparatively small expenditure of force that the idea must have immense attraction for the enemy. He knows that on land our defence is weak, and a sufficient army, once landed, would be within a few marches of London. But to land, our Naval defence must be eluded or broken. In that difficulty alone lies the comparative security of England and our consequent ability to denude our shores of land forces to an extent that would otherwise be impossible.

But our power of disposing of the land forces thus made available is not unlimited. France is not strong enough to guard her own front securely without help which we alone can give. Even having regard to selfish motives alone, unless we are prepared to maintain a large garrison in England, we dare not risk seeing France over-run. The capture of the northern French Channel ports by the Germans, giving them a measure of control over the Straits of Dover, would suffice to add seriously to our Naval task and to increase the possibility of a German attempt against England. In the most literal sense, in fact, we are defending England in France, and although a strong Allied *offensive* in France would probably deprive the Germans of the power of detaching from there, a *defensive* attitude would not have that effect. The problem of Home Defence in the United Kingdom is too long and complicated to be entered on in detail in this paper. But, from an examination of it, the General Staff are of opinion that *if numbers in France were limited to what is necessary*

for a strict defensive, and allowing for Russia's offensive weakness, it would not be safe to leave the United Kingdom with a garrison of less than 4 regular divisions, fully armed and equipped, in addition to the Reserve units and the weak Territorial divisions at present available.

From a careful consideration of numbers and general conditions, the General Staff are of opinion that to secure France defensively the whole of the French Army, plus 28 British divisions (*for the length of front we now hold*), are required, unless, and until, Russia can bring far heavier pressure to bear on the East front than she will be able to do for several months from now.

13. Thus we arrive at 32 divisions as what we require in France and the United Kingdom—the four divisions allotted to the latter being in addition to the 13 Territorial divisions now there. If these Territorial divisions were brought up to, and maintained at, full strength and fully armed, equipped and trained, and were suitably distributed with a view especially to protecting London against attack from the east, the four Regular divisions could safely be released. But unless the problem of dealing effectively with the Territorial Divisions is promptly solved either by filling up their depleted ranks with men enlisted for general service for the period of the war, or by other means, there can be no question of their being brought up to strength for some months, if ever, owing to the heavy drain on account of drafts for divisions abroad.

14. If these 13 Territorial divisions were brought up to strength we should have available (in Europe and Egypt) 72 divisions *in all*, including the troops already furnished from the Oversea Dominions. This number includes an additional Canadian division, which it is intended to organize in England, and also a Territorial division which it is proposed to form out of detached units now in France. It also includes 2 New Army divisions at home which are still very incomplete and are unlikely to be fit to take the field before the spring. Without the 13 Territorial divisions we can therefore at present only dispose of 55 divisions, which will be increased to 59 later.

15. By abandoning entirely offensive operations in France and by allotting 32 divisions to France and to the United Kingdom we can therefore at present make available for service elsewhere a total of only 23 divisions (55 - 32).

Of these 23 divisions, two are just ready to take the field for the first time, and three more will become available to do so during the next 3 or 4 weeks.

Ten others are in Gallipoli, most of them so reduced in strength and general efficiency that, even if withdrawn, they will not recover their full fighting value before the early spring. Five more are in Salonika.

If we retain 5 divisions at Salonika and 4 (estimated to be necessary) at Helles we have 14 left. From these we have to provide for the defence of Egypt, for which 8 divisions are estimated to be required. Therefore, as matters stand, by taking up a passive rôle in France we should have 6 divisions which could be made available for operations elsewhere, and it is not impossible that developments at any time during the next few months may bring about a need to use some of these to strengthen our defences in Salonika, Egypt, France, Helles, or possibly India.

16. To summarise, for purely defensive purposes in Europe and Egypt we should require—

In the United Kingdom (in addition to 18 weak Territorial divisions)						4 divisions.
In France .. .. .	..	..	..	..	..	28 "
In Egypt .. .. .	..	..	..	..	..	8 "
In Helles .. .. .	..	..	..	..	..	4 "
In Salonika (at present) .. .. .	..	..	..	..	..	5 "
Total						<u>49</u> "

17. From the foregoing statement, assuming that we can bring up to strength and maintain in the field continuously a total of 59 divisions, at war strength, the number of troops available for an offensive in the spring, after providing for defensive requirements, depends on where that offensive is made.

If it is made in France we should have, on the above calculation—

28 divisions then there.

10 estimated as surplus to defensive requirements stated above
(59 minus 49).

4 released from England by our offensive in France.

42

And if we withdrew from Salonika and Helles we could add another nine, while eight from Egypt, or some of them, might also be available. Moreover, on the assumption that a really strong offensive in France would secure England we could also put in some of the 18 Territorial Force divisions still in England, if they are maintained and brought up to strength.*

Thus the total force available for an offensive in France next year may be taken as a minimum of about 42 and a maximum of 59, or even more (if a few of the Territorial divisions in England could be taken), according to circumstances and to the policy that we adopt as regards the degree of risk to be accepted in secondary theatres of war.

For an offensive in the Balkans we should have, in spring—

—	Probable minimum.	Possible maximum.
At Salonika	5	5
Surplus divisions	10	10
From Egypt and Helles, uncertain, say ..	..	10
From England (if the 18 Territorial Force divisions are brought up to full strength)	..	4
Totals	15	29

provided we had not been obliged to reinforce France or India.

* As regards this last-mentioned force, it must be noted that if the divisions cannot be maintained at least at their present strength, and if we stand on the defensive in France, much more than four Regular divisions should be allotted for home defence.

The calculation made for the Balkans would apply generally to any offensive in the Mediterranean.

18. We can look for no direct material assistance from France or Russia in any offensive outside the present main theatre of operations. The French can do little, if anything, outside the main front they are now holding, at any rate unless we take over more of the line there, which would proportionately reduce the estimates made above.

The Russians also, owing to lack of munitions, may be strained to their utmost power to hold their own main front if seriously attacked. At present, so far as can be ascertained, their armed strength in infantry is well under 1,000,000, and we cannot rely on their being able to operate with more than 1½ millions in the spring and 2 millions in the summer.

19. The Italians, if willing, could probably spare a large force—up to perhaps half a million—without abandoning entirely the offensive operations on the Austrian frontier now in progress, if such a force could be transported to any other theatre of war; but in view of their special interests, of their probable natural reluctance to uncover their own frontier, and of transport difficulties, it would not seem wise to calculate on more than an Italian detachment of perhaps 100,000 men, operating from the Adriatic, or perhaps in North Africa. Submarine difficulties might make even such operations very difficult.

20. The Serbs, according to French estimates, will have 250,000 men in the field next spring if the Allies can arm and equip them. The latter could only be done at the expense of Russia, and would reduce her strength proportionately. But, in any case, the General Staff are not prepared to accept the estimate mentioned. They consider that 100,000 is a maximum figure, and that we should calculate on the Serbs being available only in or near the Balkans and in co-operation with other Allied forces if any such are employed there. From the present trend of events it is even quite possible that neither Serbs nor Montenegrins will be available to co-operate in any appreciable numbers in future operations.

21. The only other possible sources of help are our Allies in the Far East, or some of the nations at present neutral. Assistance in Europe from Japan is outside the scope of this paper, as are speculations as to what Sweden, Norway, Denmark, Holland, Spain, &c., may or may not do. We can certainly frame no plan now on any assumption of a change of attitude on the part of these neutral nations. The Balkan States at present neutral, however, cannot be ignored. Their geographical position and their attitude affect events in the main theatre of war so immediately, that they must be taken into account. It will be convenient to discuss this complicated problem in a separate section of this paper.

SECTION 3.—THE BALKAN PROBLEM.

22. The attitude and course of action of the Balkan States requires consideration as regards probable effects, not only on events in the main theatre of war, but also on the Arab and Mahometan Worlds. The situation in the Balkans is so complex that future developments cannot be foreseen with any certainty, and, therefore,

our plan of campaign—so far as Balkan influences are concerned—must be based mainly on assumption.

That being so, our wisest course undoubtedly is to adapt our plan to the most unfavourable conditions that it is reasonable to regard as possible. Having done that we shall be prepared to deal suitably with those conditions, while if things fall out more favourably we shall be so much to the good. To adopt the opposite course, viz., to base our actions on vague hopes of a favourable turn of events, would be to take grave risks of having to change our plans while in process of execution, a procedure which must always be dangerous and is generally disastrous.

23. We are certainly not justified in basing any plan now on a hope of active help from Greece. Behind her attitude of professed benevolent neutrality, symptoms of feelings which cannot be regarded as friendly have made themselves evident. We shall be on firmer ground if we act in future on the assumption that Greece will remain neutral if she can, until there is no longer room for reasonable doubt as to the results of the war, and that meanwhile if she has to yield to force she is even more afraid of the Central Powers than of the Entente. We are now in an entirely false position in Greece. We should be wrong to regard her territory as available as a base for present or future operations unless we are prepared to occupy by force such portion as we may require, and to guard it against possible attack by the Greeks. For this large forces would be required.

24. Serbia, in full possession of the enemy, is now hostile territory, and we should find it adequately garrisoned against any possible Allied operations. Its mountainous nature and lack of communications make it easy to defend, and it is within the power of the Central States to throw reinforcements quickly into Serbia if required there, and to withdraw these again to the main theatre at need.

Bulgaria, covering one flank of Serbia, is equally difficult to attack, and can be reinforced either by the Central Powers or by Turkey.

Albania, on the other flank of Serbia, is a difficult country to enter from the Adriatic (owing to the danger from Austrian submarines and the inadequacy of the harbours). It is practically impossible to pass through in great force, owing to natural difficulties and lack of communications. And it is peopled by a race, capable of being very troublesome in their own mountains, on whose friendship we are not justified in basing any plans.

Further north Montenegro is equally difficult to operate in; while north of Montenegro lies mountain territory, whose inhabitants, though in sympathy with the Entente, are powerless to assist us actively.

Thus we are shut off from the Central Powers, on their southern side, by a broad band of hostile or potentially hostile territory, extending from the Black Sea to the Adriatic, and occupied practically from shore to shore by strong hostile armies which can rapidly be reinforced by the Central States should need arise.

The only really friendly and dependable spot to be looked for in this hostile belt is that in which the remnants of the Serb army may find refuge: they may find none, and even if they do they would require much assistance (some of which would have to be diverted from Russia) before they could take the field again.

25. Under such conditions an offensive through the Balkans,

intended ultimately to reach and cross the Danube, would be a very formidable undertaking.

It would take months to equip the force suitably and to transport, land, and deploy it. Unless and until Greece actually joined us we should have to guard our base strongly. Then to fight our way to the Danube, even helped by Italians and Serbs from the Adriatic, would be costly and take considerable time. When we got to the Danube—having abandoned any offensive in France to do so—there is no reason to suppose that our further progress would be any easier than an advance in France.

It is very doubtful whether this great effort would induce Greece to join us. We can hardly suppose that it would induce Bulgaria or Turkey to change sides. They are much more likely to oppose our advance strongly. As to the chance of bringing Roumania in, it is only necessary to point out that if she can be coerced into joining the other side she will have been so coerced long before we could even have landed on the Ægean coast a sufficient force to commence our advance, and if she has not been coerced by then it would be convincing evidence of her future neutrality, if nothing better.

Without going more deeply into the question here, but after having considered it very fully, the General Staff are convinced that to employ our "surplus" divisions (*vide* paragraph 17) in the Balkans next spring and summer (and it could not be done sooner) would not only not promise any adequate results as against the Central Powers, but might very possibly ruin our chance of ultimate victory.

26. Can we then do nothing to lessen the chance of Roumania being coerced into joining the Central Powers? A great offensive in the Balkans is too slow and too dangerous an expedient to adopt. Minor defensive measures, or attempts at minor offensive operations in the Balkans are costly and useless. We have had enough experience of the results of such attempts to prove that. There is no more reason to suppose that a passive defence of Salonika and the retention of a certain number of Bulgarian divisions in masking it would have any more influence on Roumania than the presence of the British force at the Dardanelles had on Bulgaria, once the prospect of a successful advance on Constantinople had vanished. Nor could it in reality have any effect in preventing Bulgarians or Austrians operating at leisure in Montenegro or Albania, or in hampering German or Turkish plans in the East.

The plain truth is that the Allies are unable, at present, to prevent forcibly the coercion of Roumania and we only make matters worse by attempting it with inadequate forces. It is one of the penalties for general lack of preparation against an enemy who was fully prepared.

So far as military measures are concerned we must accept the chance of Roumania being coerced, and we must include in our plan of campaign the best measures we can devise to minimise the effects of her possible entry against us.

If she does join the Central Powers the direct effect in the main theatre of war will be to increase by 250 miles the front which Russia has to guard and to add appreciably to the numbers available to attack her. It will also improve very greatly the means of communication, lateral and rearward, by railway and river, enjoyed

by the Central Powers, and even possibly put them into the position of disputing with Russia the command of the Black Sea. The best way to deal with such a situation will be suggested as part of the general plan to be proposed.

27. It is conceivable that failure on the part of the Allies to re-establish themselves in the Balkans may enable the Central Powers to use Bulgarian and Turkish troops, as well as Roumanians, in the main theatre of war. But, even if that be so, it will certainly be no worse for us in our struggle against the Central Powers to have to meet detachments of those troops in the main theatre of war than to involve ourselves against their main armies, in their own mountains, under conditions which, in some respects, would be decidedly more unfavourable to us. Moreover, it is at least as likely that the Bulgars will busy themselves in their newly occupied territory, and that the Turks will seek conquests eastward, as that either will help the Central Powers on their east or west fronts.

28. So far as the Balkans are concerned, therefore, the weight of argument is strongly in favour of the Allies trying to re-establish their influence in that region by first defeating the Central Powers, instead of seeking to re-establish themselves in the Balkans as a possible means of eventually defeating the Central Powers.

29. Turkey is likely to look for her reward eastward. We cannot prevent this by such operations as have been discussed in the preceding paragraphs; and, in previous papers, the arguments against the possibility of preventing it by operations in the Dardanelles during the winter have already been explained. We must therefore rely on other means. (*See end of this paragraph.*)

Various plans bearing on the Balkan problem have been discussed in papers already submitted by the General Staff, and for the reasons given therein it is still considered that our wisest and most economical course, on strategical grounds, is to defend Egypt from Egypt; to regard the Baghdad operations as secondary at present to the defeat of the Central Powers; and to rely on the present garrison of India for the defence of that country, with a reinforcement of some infantry if matters develop unfavourably there.

The "other means" referred to higher up in this paragraph are the resources of diplomacy.

Diplomatic measures are outside General Staff responsibilities, but as strategy and diplomacy should go hand in hand in war it may be permissible to offer a suggestion as to how the latter could render most effective help to the former.

Diplomacy can help strategy by realizing where strategical exigencies demand delay and where they demand quick decision, and by exerting its influence accordingly.

Probably the most effective help that diplomacy could give now would be to detach Turkey from the Central Powers and set her against Bulgaria. This, if it be possible, would relieve very considerably the tension in the East, and (if it could be done quickly) would also tend to enable Roumania to resist coercion.

We have many sympathisers in Turkey. We owe Bulgaria nothing. Germany is in Bulgaria's debt and she can reward Turkey—if at all—only by offering her a free hand eastwards. We have, therefore, a diplomatic advantage over Germany in this respect *if we are free to use it*, a point on which the General Staff are not qualified to offer any opinion.

The extent to which Russia would stand to lose by this depends apparently on whether there are sufficient grounds now for hope of such a victory as would enable the Entente to impose what terms it likes. If favourable terms could be offered to Turkey, Russia in common with all her Allies would gain enormously in the increased chance of victory if the bait were accepted, while if it were refused we should be no worse off. If a favourable offer to Turkey were made at once and accepted it might go a long way towards solving the Dardanelles problem, voluntary withdrawal from which would fit in with the plan.

The military advantages to be gained have emboldened the General Staff to put forward these suggestions for such consideration as they may be deemed worthy of from the diplomatic point of view.

30. Before turning to final considerations and formulating their recommendations the General Staff desire to touch briefly here on a few of the more important considerations which have been taken into full account in their examination of the problem, but which space does not admit of stating at length. The first of these is the limitation in the power of the Navy to transport and escort troops and the vast quantities of stores required for their maintenance; to open, administer and guard new bases; and to carry out all the multifarious duties devolving on them. The strain thrown on the Navy has been enormous, though not generally understood, partly through want of knowledge of what heavy and difficult work is involved, and partly owing to the great success with which that work has been carried through. But there is a limit, and it must be taken into account in plans of operations. There is some reason to think that we have already almost exceeded the limit in the number of transports withdrawn from other vital work.

A second point is the need for special equipment for special operations. It is indispensable. It is very costly. It takes a long time to procure and it is not always obtainable.

A third point is the uselessness and the danger of offensive operations undertaken in insufficient strength. In plans of operations the courses open to the enemy must be very fully considered and he must be credited with acting on sound lines. To attempt an offensive against him with insufficient strength is to invite disaster.

A final point is the inability of a pure defensive to do more than repulse attacks and gain time. So much it can do if in adequate strength and adequately prepared. But, unless a force on the defensive is so placed that it bars the enemy's road to his object, its effect on his freedom of action is negligible. He has merely to "contain" it, which can generally be done by inferior forces, and in certain circumstances he may be able to neglect it altogether. It is only when the enemy has reason to think that circumstances would permit of the defensive attitude being suddenly and unexpectedly turned into a dangerous offensive that he is compelled to devote serious attention to it.

SECTION 4.—POSSIBILITIES OF A SUCCESSFUL OFFENSIVE IN THE MAIN THEATRE OF WAR.

31. Heretofore both the Allies and the Central Powers have sought a decision on one or other of the main fronts. Their efforts have resulted in what is practically a stalemate on those fronts at

the present time, but a stalemate which leaves the enemy in possession of large tracts of Allied territory. If he cannot be forced to abandon that territory—particularly (taking the British point of view) Belgium, the integrity of which was an ostensible cause of quarrel—he will hold the trump cards in the eventual peace negotiations. When we seek for new lines of advance, therefore, we really seek them primarily as an indirect means of regaining what has been lost on the East and West fronts, and we look for indirect means only because we have abandoned faith in our ability to drive the enemy back by direct attack, which would clearly be a quicker and more effective method, unless it be impossible.

32. The idea of an easier way round appears to be based more on impatience than on careful examination of evidence.

The General Staff find that our responsible officers in France, who are in close touch with the situation and with the relative "moral" of the opposing armies, are entirely confident in the possibility of defeating the enemy there, if we set about it in the right way.

Our Allies on the East front appear to be fully determined to maintain the struggle to a successful issue, and—given certain procurable requirements—they are capable of throwing far more weight into the scale than they have been able to do for several months past. Italy has no lack of men, and according to the General Staff information her army, too, is able and willing to do more than it has yet done.

The British Empire has not even yet deployed the full strength of which it is capable, nor has it so far applied at a decisive time and place anything like the greatest possible proportion of such strength as is available.

The truth is that by means of adequate preparation on their side and inadequate preparation on ours the enemy gained great advantages at the outset, just as we saw Prussia do in 1866 and Germany in 1870. In those smaller wars the limited resources of Austria and France were insufficient to enable them to recover from their first misfortunes. In this far greater war the resources of the Allies are sufficient to enable them to wear out the enemy and finally to beat him, if only the will to conquer and a sound direction of their united efforts and resources are not wanting.

33. The Allies, up to date, have fought at a grave disadvantage. Partly through unreadiness and partly through lack of that unity of control possessed by the enemy, which saves valuable time and ensures homogeneity and continuity of action, their efforts have been piecemeal, and some of their strength has been dissipated in vain attempts to accomplish secondary objects with inadequate means.

Despite all this they are now attaining to an approximate equilibrium of force, and to a power to employ the whole of it simultaneously, which they did not possess originally. They are capable, if they will, of developing superior force next year, and of using it in a manner which will throw a vastly greater strain on Germany's power of resistance than it has yet been subjected to.

Is Germany capable of resisting that strain?

34. In the full might of her readiness at the outset she tried to rush matters in France, and she nearly succeeded. Her failure lay not in the fact that she was beaten on the Marne, but that she thrust

beyond her strength, thereby showing its limitation—and had to draw back to recover her balance.

After a winter spent in preparation she next turned on Russia, and the Allies in the west were compelled to look on while she did so. If they could have struck—really hard—at that time Russia would probably have been able at least to hold her own, or Germany by running her defences too fine in the west might have been defeated there.

The next great move was the Allied offensive in the west last autumn, made when Russia was no longer capable of striking on her front. The results of that offensive have caused disappointment. It is not justified. The attack did not attain all that was hoped for. Perhaps it did not accomplish all that it should have accomplished. But it proved beyond reasonable doubt that the Allies' past efforts have not been made in vain, and that the relative power of Germany is far less than it was.

Instead of being able to hold one front securely while attacking on the other, as she had done previously, she was compelled by our recent offensive to abandon further attack in the east in order to reinforce on the west, and the reinforcement only enabled her to hold on—not to hit back. She was, in fact, reduced to the defensive, for the first time, on both fronts. It is true that she had a large detachment—possibly 200,000 Austro-Germans—absent in the Balkans. But we, too, had considerable forces absent, and in any case it is in the power of the Allies to counterbalance an addition of far more than 200,000 men to the enemy's forces in the Main Theatre next spring.

35. We had 35 divisions in France during the autumn offensive. It has been shown in a previous section that, *if we do all that we are capable of doing*, and act on the principle of being as strong as possible at the decisive point even at the cost of grave risks elsewhere, we could employ 59 divisions, or possibly more, in France next year.

The French, we are informed, can maintain through next spring and summer about the same force they had last autumn—2½ millions. To this the Belgians add about 100,000.

Russia, with the munitions already promised, can add at least 700,000 men to her army by next April or May. This alone would more than counterbalance 200,000 Austro-Germans recalled from the Balkans plus the Roumanian Army.

If, by any means, the Allies could increase still further the supply of arms and munitions to Russia, without weakening their own efforts, her resources in men and her readiness to use them are practically unlimited. But even as matters stand it is within the power of the Allies to have greater relative strength against the Central Powers plus Roumania next spring than they had last autumn.

Italy was "containing" at that time only some 250,000 Austrians. The General Staff are informed that she has no lack of men, but is at present short of big guns and big gun ammunition. When she has provided herself with these she may prove capable (especially with the aid of naval co-operation) of forcing the present Austrian defences and so gain more room to deploy. As she can place in the field and maintain there, up to strength, an army of a million men, she could, with more room for deployment, at least contain far more than 250,000 Austrians. Italy's comparative proximity to Buda Pesth and Vienna would ensure the employment of adequate

means of defence against her if her advance threatened to succeed, and at the same time a vigorous simultaneous offensive on the East and West fronts would deprive the enemy of the power of turning on Italy and overwhelming her army.

36. How would the Central Powers stand against such a general simultaneous offensive next year? According to calculations, they have almost reached their possible total in quantity and they are deteriorating in quality.

Last autumn, even though Russia was incapable of striking and Italy was tied to her narrow mountainous frontier, we saw Germany reduced to the defensive on both main fronts, and in the west greater success than was achieved was within, or almost within, our grasp.

The advantage of interior lines, which the enemy has, is lost when he loses his power to throw reserves from side to side at will. When he is "all out" on the defensive, and hard pressed by equal or superior forces, his sting has been drawn and success against him at any one point is likely to be the beginning of disaster. A converging form of attack is more effective than "interior lines," if the converging armies are strong enough to press vigorously and simultaneously everywhere and to maintain the pressure.

37. Judging by last autumn, even if Roumania joins the enemy and if other Balkan detachments help him, is there any reason why the Allies should not be capable of this pressure next year, if they concentrate now on developing their utmost strength, if they all determine to exert that strength simultaneously against the Austro-Germans, avoid dissipating their strength in secondary theatres and act on a generally accepted plan? Where there is very superior strength and unquestionable unity of control, far-seeing plans of campaign may not be a necessity. But when the instrument available is made up of armies furnished by several independent States, unity of direction would seem to be impossible without such a plan.

38. The history of war teaches that execution of a plan is more important than the plan itself, provided the latter is at least reasonable. It appears to the General Staff that strong, vigorous, simultaneous, and sustained pressure by all the Allies on existing main fronts, as early as possible next spring, is not only a reasonable plan but practically the only one offering any reasonable prospect of defeating the armies of the Central Powers next year. If no effort be spared in preparation, and if the execution be carried out wholeheartedly, the prospects of success are considered at least sufficient to justify the attempt.

39. To carry out this plan wholeheartedly certainly entails accepting some risks outside the Main Theatre, and since we are dealing with a strong, united and determined enemy, even a sound and well executed plan may fail. Should we then be worse off than if we had deprived the plan of its best chance of success by refusing to take any risks? So far as the General Staff are able to judge we should not be worse off. If the Central Powers are entirely victorious in this war they will impose their own terms, which are not likely to err on the side of mercy to the vanquished. If the Allies are victorious over the Central Powers they will then have a free hand to deal with their minor enemies, and but little further effort—if any—would be required to dispose of the latter. The need for further effort would of course be distasteful, but surely it is worth facing the possibility in order to gain the greatest—indeed

we believe practically the only—chance of reaping all the advantages that such a victory as the defeat of the Central Powers would give.

40. We must play either for checkmate or for stalemate. If we determine to play for the latter the General Staff see no prospect of depriving the enemy, by force, of what he now holds, as we should have to concentrate our efforts, not on defeating him, but on defending from him what he has not yet gained. In such a contest the advantages would rest with him.

41. As has already been explained, so long as the Allies stand on the defensive, the enemy can utilize the advantages of his interior lines and more rapid means of communication. By means thereof he can force the Allies to hold so much of their strength to guard their own borders that their power of offence—and even of defence—in other theatres is very limited. This would leave him free, not only to strike when and where he pleased, but to intrigue with and encourage, and even to give material help to, our potential enemies in the Near and Far East, and, if the war be long drawn out, he may stir up more trouble than we should be able to cope with.

42. There is, however, one possible alternative left to consider—the possibility that financial ruin, or discontent arising out of shortage of food and other hardships, may compel the enemy to give way. It may be, in fact, that we have the option of compelling surrender by investment instead of carrying the fortress by assault. If so, and if we are to decide in favour of the former, we must make our dispositions accordingly.

The possibility of ultimate victory by investment depends mainly on the power of the Allies to make the investment complete, to outstay the enemy financially, and to deprive him of the food or other supplies necessary for the maintenance of his resistance.

This again depends partly on naval and military, and partly on financial and other considerations. As regards the latter the General Staff are not competent judges, but so far as they have been able to study evidence on the subject they do not regard the prospect as encouraging. The Germans are a brave race, capable of much endurance, and subservient to a control which is not lacking in determination. The reduction of such a garrison by investment is likely to be a long and wearying process, and such processes are a particularly severe test of the strength of the bonds of an alliance.

From the naval and military point of view, making due allowance for the need to consider the interests of neutral States, it is very doubtful whether the investment could be made effective, and if it is to be made as effective as possible it would not be within the power of the Allies to carry on a strong general offensive at the same time, since so many troops would have to be disposed defensively to complete the investment line.

43. It seems that some of the measures recently attempted in the Mediterranean had some idea of investment underlying them; and, no doubt, if the Allies could have brought the Balkan States over to their side, or kept them strictly neutral, a fairly complete investment might have been maintained. But it is too late for that now. For reasons already given we must regain our position in the Balkan States through Germany, and not vice versa. Therefore, now, our investment line would have to include these States within it—a task beyond our means. Moreover, the Central Powers will have re-provisioned themselves to some extent from the Balkans.

It seems, therefore, that there is insufficient ground for hope that the misery and privation in Germany will be great enough to force her to surrender so long as her people continue to believe in ultimate victory. As regards her supply of men, a policy of investment would enable her to economize her last reserves, and there is no sufficient evidence to show that, in that case, she could not protract the war for a very long time. Above all nations she believes in force, and it is only to force that she will give in.

But nevertheless the Allies may get help, and great help, from Germany's privations. Her people are enduring much to win. How would it affect them if the hope of winning died—if the belief in the invincibility of their armies were shattered?

The Germans are capable of giving way to utter panic. This was proved more than once in 1870. The "moral" of their men is deteriorating. We are in a position, with plenty of munitions, to try it far more severely this winter than last winter.

Next spring and summer such an effort by the Allies as has been suggested in the foregoing pages stands at least a fair chance of pushing back the enemy's armies. They may break badly. Even if they do not, the spectacle of the armies in retreat over, or even towards, their own borders, after all their struggles, and hopes, and privations, might well prove to be more than the German and Austrian people could bear.

SECTION 5.—CONCLUSIONS AS TO THE BEST COURSE OF ACTION FOR THE ALLIES.

44. The defeat of the Austro-German armies on the existing main fronts is undoubtedly a most difficult task, but there are no sufficient grounds for concluding that it is not possible to accomplish it if the Allies set about it in the right way.

45. The hope—born of the difficulties of gaining a victory on the existing main fronts—that the Allies can find an easier way to victory over the Austro-German armies by opening a new main line of advance, has no justification in fact. Any attempt to open such a new main line of advance would place the Allies at a grave disadvantage during the months that would be required to develop the operation, and even the successful opening of such a new line of advance, far from placing the Allies in a better position, would merely open to the enemy greater opportunities of making advantageous use of his interior lines of operation and superior means of communication.

46. In short, the choice open to the Allies does not lie between different lines of offence, but between what may be described as assault or investment.

If the Balkan States had joined the Entente, or remained strictly neutral, effective investment would have been easier to accomplish than it is now. As matters stand, however, the position secured by the Central Powers in the Balkan States places them in a stronger position as regards supplies of food and certain other requirements, and also, perhaps, in some degree as regards reserves of men. It was not possible to prevent by force this advantage falling into the enemy's hands owing to his superior and interior means of communication, and to the inability of the Allies to develop their full

fighting strength with sufficient rapidity. The attempt to foil the enemy's plans with inadequate means has proved costly and may become more so if continued. Neither is it possible now to win back control of the Balkan States by force of arms, as any attempt to do so would place the Allies at a grave disadvantage as against the Central Powers during, probably, the whole of the next year, and would entail, so far as can be foreseen, the employment for that time of a considerable part of the Allied forces against the Balkan Allies of the Central Powers rather than against the armies of those powers. As it is very unlikely that the Balkan States would send any large forces (except possibly 300,000 to 400,000 men into Bessarabia, if Roumania joins the Central Powers), the Allies can to a great extent avoid having to fight the armies of these States by avoiding the Balkan theatre of war. In the circumstances it is undoubtedly wiser to avoid it. Therefore, if investment is the method to be relied on, the line of investment should run outside the Balkans; and if an offensive is to be prosecuted it has far greater chances of success on the existing main fronts than through the Balkans.

47. Existing and—so far as can be foreseen—probable future conditions are not favourable to success by investment, and, at the best, it is almost certain that it would take a long time to reduce the enemy to submission by such means. On the other hand, so far as the information at their disposal goes the General Staff consider that a vigorous, sustained, simultaneous, general offensive offers better prospects of success than any other course open to the Allies.

48. Accordingly the General Staff recommend, unhesitatingly, a vigorous prosecution of the offensive on the existing East and West and Italian fronts as the wisest course to pursue.

There are no certainties in war, and it cannot be guaranteed that the course recommended would succeed, but the General Staff feel convinced that there is no alternative worth adopting, and that the prospects of success, and perhaps decisive success, for such an offensive are good if all the Allies agree on it, prepare for it without delay and to the utmost of their several and collective abilities, and carry it through whole heartedly and with the utmost vigour. By so much as any of the Allies falls short of developing his full power of preparation and execution by so much will the chance of success be reduced.

If the course the General Staff recommend is to be adopted, the naval, military and diplomatic measures to be taken from now onwards by all the Allies should be combined towards ensuring the greatest possible chance of success for the proposed offensive. Every step taken in future should lead towards that end. Preparations should commence now and the British Empire should spare no effort to develop its fullest strength without a moment's delay and to do all that it can to help its Allies to develop theirs.

If all this be done without stint the General Staff have every hope of a victorious ending to the war.

The alternative to the offensive recommended is not the discovery of some easier road to success but failure to attain a victory which is almost certainly within the power of the Entente if it be true to itself and to the cause it champions.

SECTION 6.—OUTLINE OF THE PLAN RECOMMENDED BY THE
GENERAL STAFF FOR THE FUTURE CONDUCT OF THE WAR.

The utmost concentration of effort at the time and place chosen for a decision cannot be ensured without reducing to a minimum all commitments elsewhere which would be likely to weaken the main offensive. Therefore the Allies must be prepared to accept risks outside the main theatre, and in cases where it is judged impossible to leave important interests entirely unguarded efforts must be regulated by the ruling strategical principle of being as strong as possible at the decisive place and time ; that is to say it will generally be necessary in all secondary theatres which cannot be entirely ignored that the military and diplomatic measures taken should be designed to gaining time and safeguarding our interests with a minimum expenditure of force, rather than to forcing an issue. The only possible exception to this would be in cases, should any exist, where it is possible by vigorous measures to dispose of threatening dangers so quickly that the troops employed could then be withdrawn to France by the early Spring. Transport possibilities constitute an important factor in the problem.

To apply the principles stated in the preceding paragraph the General Staff are of opinion that it would be most advantageous to be relieved of our present commitments in the Balkan Theatre. If there were good reason to suppose that the Central Powers are on the verge of collapse then it would possibly be unwise to loose our hold anywhere. But there is no sufficient evidence to justify that belief, and the General Staff are convinced that no military or political object, sufficient to justify the expenditure of force involved, can be obtained in the Balkans with the forces available, while a continuance of the operations there will undoubtedly weaken future offensive operations in the main theatre to an extent which will seriously prejudice our hopes of success there. We require every man we can find to break the enemy's resistance in that theatre.

Egypt and the Suez Canal no doubt must be defended, and we might aim there either at merely repulsing the Turkish attacks until want of water in the Spring forces them to withdraw, or at being strong enough to defeat the first attacks so heavily as to drive the enemy off at once and so release our forces to return to France. For the former eight divisions should suffice. Strong arguments against the latter alternative are the impossibility of following up a beaten enemy to any distance into the desert, the limitations of our power to transport troops rapidly by sea (*especially while Salonika and the Dardanelles absorb so much of our means of transport*) and the inadvisability of running too fine our defences in France, where a renewal of German attacks is by no means improbable, and where, even if our own front be secure, there may be need to assist our Allies.

In case it is necessary to extricate the force now operating in Mesopotamia with Indian troops, India may have to be reinforced by some infantry. Our aim there, military and diplomatic, must be to gain time. Probably less expenditure of force would be involved in maintaining a sufficient garrison in India to hold it than in undertaking operations towards Baghdad in the hope of thereby preventing or delaying Mahometan outbreaks. A choice between these alternatives would seem worth further discussion with the

Government of India, but it must be on the basis that the most urgent need is to be as strong as possible in France.

The withdrawal at the earliest moment of divisions from Egypt, and, if possible, from India also, must constantly be held in mind. It should be feasible to employ several, if not all, of them in France by next summer at the latest if every effort is made to do so and unavoidable risks are accepted.

The views of the General Staff as to East Africa have been submitted on a separate paper, and a decision as to the action to be taken there during the next few months has been given by the War Council. It is, therefore, unnecessary to discuss the problem in this paper.

As regards preparation during the winter, it is of vital importance that the British Empire should exert its utmost efforts to develop its full powers in men and munitions in readiness for the great offensive.

There is no time to raise and equip further new armies, but we should as a nation do all in our power to bring all existing cadres up to full strength, in all respects, without delay; and if we can add another division or two so much the better. It is equally necessary to provide without delay for replacing all wastage in these divisions, even on a scale beyond all previous experience, by having the necessary drafts on the spot in anticipation.

The ruling principle must be to place every possible division—fully manned and equipped in all respects—in France next spring.

With due regard to Home Defence requirements while we are on the defensive in France, and to unavoidable defensive measures in India and Egypt, we should maintain ample forces in France during the winter, so that the men may have frequent reliefs and as much leave as possible in order to keep them healthy and in good heart. Ample strength at home and in France will obviate much anxiety and will enable us to take steps to wear down the enemy's "moral" during the winter in a way that was not possible last winter. As far as possible new divisions should be sent to France in turn during the winter, in order that they may become accustomed to the conditions there.

As a really strong offensive in France may be expected to make it practically impossible for the enemy to detach any large force to attempt a landing in England, the divisions in garrison in England, or most of them, should be thrown into the offensive in France when it begins. Therefore, they should be fit to take part in that offensive.

After providing for our own needs, we should do what we can to assist the Russians to arm the numbers they have available.

The actual plan of attack in spring must be left to the commanders in the field, who should be given as soon as possible all information necessary to enable them to prepare for it. The date should be arranged between the Governments concerned. The General Staff, however, if it be permissible to offer any suggestions to our Allies, would venture to submit two, viz. :—

- (i.) If Russia be attacked by, or through, Roumania, it would fit in best with the general offensive proposed if she relied on defensive delaying action in Bessarabia and brought her main weight to bear as directly as possible further north.
- (ii.) If Italy could use her surplus numbers (combined if possible

with Serbs and Montenegrins) in an oversea operation, either through the Istrian peninsula or in the near neighbourhood of it, it would (if such an operation be possible) be likely to help her main advance and to result in larger Austrian forces being drawn to that front. Any such effort should be timed so that its effect would synchronise with the general offensive elsewhere.

So far as the difficulty of protecting the transport of troops across the Adriatic goes, our Navy could probably give considerable help to Italy if the present strain on it were reduced by the abandonment of Salonika.

In this regard the General Staff desire to submit a point for special consideration.

The sea power of Great Britain is one of the most important factors in this war. Without it there could be no British Army in France to-day. It is not only an essential condition of any overseas expedition, but the security of the seas and of Great Britain herself may be affected prejudicially by such expeditions if they involve too great a dispersion of naval effort. Further, our unique facilities for sea transport, and our unrivalled experience in this respect, make us in such matters the predominant partner in the Alliance. It is surely not too much, therefore, to expect that in any consideration of expeditions involving a heavy call on our sea power and means of sea transport, the views of this country as to what should or should not be attempted should carry special weight.

The possibilities of action open to the Central Powers will be affected by the measures taken by the Allies. If the latter carry out a really strong offensive on the lines proposed, the Central Powers will certainly be compelled to use all their force to resist it. But in accordance with their usual custom it is most probable that they will endeavour to anticipate it. Success against Italy would be of comparatively minor value to Germany at the present juncture. Austria may desire it, but Germany is likely to regard it more impartially and to rank other projects as of more immediate value. It is therefore far more likely that the enemy will take in hand an offensive against Russia or France, if not against England also.

An offensive against France would, if successful, give far more immediate results than an attack on Russia, especially if the Allied forces there are seriously weakened for operations elsewhere. On the other hand, Russia is perhaps the enemy that Germany dreads most in the future, and with the help of Roumania (if obtainable) and perhaps of Turkey, she may regard success against Russia as more easily attainable in the Spring.

The enemy may, therefore, select either France or Russia as his main objective. In either case, strength in France will be of equal advantage to all the Allies. It would enable us to beat off attack there and to counter-attack, while a strong attack by the Allies in France would be the best and quickest way to draw pressure off Russia.

The most probable action by the Central Powers then is :—

To hold the Italian frontier defensively.

To use Turkish troops and every other means possible, short of employing German troops in any appreciable numbers, to induce England to detach as much as possible to the East.

To utilise (if possible) Roumanian troops and also, so far as may

be possible, Turkish troops against Southern Russia. The Bulgars would probably be unwilling to fight the Russians, otherwise they might be invited to join too.

Then to mass as strong a force as possible for an offensive either against France or Russia timed to anticipate the Allies' offensive.

The possibility of a landing in England will be held in view constantly.

It is very unlikely that Germany will detach any considerable part of her own forces to any great distance from the main theatre of war.

If this forecast is correct, the advantages of the dispositions recommended above for the Allied forces are evident.

The only other main courses open to the enemy are to content himself with holding what he has got, stand on the defensive, and endeavour to "outstay" us; or to enter on a career of conquest in the East. If he adopts the latter course, such an offensive as has been recommended will undoubtedly force him to recall his troops at once, and the Allies will reap all the benefit of having forced him to change his plans. If he should choose the former course, which would be contrary to all his principles of war, the Allies must either defeat him on one or other of his main fronts, or organize some slow and indirect new line of advance, the disadvantages of which have been pointed out in the preceding pages, or sit down to a trial of endurance.

The General Staff can see no reasonable doubt that the wisest course in any of these circumstances is the offensive they have recommended.

For that offensive it is within the power of the Allies, *if they will*, to bring to bear and to maintain on the three main fronts at least $6\frac{1}{2}$ millions of men, viz. :—

France and Belgium, over	2 $\frac{1}{4}$ millions.
The British Empire, over	1 $\frac{1}{4}$..
Russia, over	2 ..
Italy	1 million.

And if her munition difficulties can be solved Russia can provide a much larger force.

Against these numbers the Central Powers, even with considerable help from the Balkan States, are unlikely to be able to maintain on the three main fronts more than from 5 to 5 $\frac{1}{2}$ millions.

With such odds in favour of the Allies if they all combine immediately in preparation, and with a wise concentration of effort at the decisive time and place, it is surely reasonable to claim that the prospects of success are encouraging.

A. J. MURRAY, Lieut.-General,
Chief of the Imperial General Staff.

16th December, 1915.

NOTE FOR THE WAR COMMITTEE BY THE CHIEF OF THE IMPERIAL GENERAL STAFF,

WITH REFERENCE TO THE GENERAL STAFF
PAPER DATED 16TH DECEMBER, 1915

1. I am in general agreement with the Paper by the General Staff on the future conduct of the War, dated 16th December, 1915,¹ and I have at present no further views or arguments on this subject to put before the War Committee.

2. It is of the utmost importance that the Commanders in the various theatres of war should be informed at once as to the future policy of the War Committee in order that they may commence the preparations necessary to put that policy into execution, and may know the means at their disposal for that purpose.

3. I should therefore be glad to know whether the War Committee approve of the following general conclusions which are drawn from the Paper above referred to :—

- (i) From the point of view of the British Empire, France and Flanders are the main theatre of operations.
- (ii) Our efforts are to be directed to carrying out offensive operations next spring in the main theatre of war in close co-operation with the Allies and in the greatest possible strength.
- (iii) We are to endeavour to reduce our commitments in other theatres of operations to the minimum force required to avoid undue risk.
- (iv) In pursuance of (iii) we are to persuade the French to withdraw with us from Salonika.
- (v) An adequate force is to be maintained in Egypt for its defence, that force being at present estimated at approximately eight divisions with some garrison troops.
- (vi) The operations in East Africa are to be carried out on the general lines approved by the War Committee and with the force already determined on by it.
- (vii) The mission of the force now employed in Mesopotamia is to be of a defensive nature, and it is intended for the present to rely on the existing garrison of India for the defence of that country.

¹ Appendix 2.

4. If the War Committee approve of the above statement of military policy, the necessary instructions will be issued by the War Office to the Commanders concerned.

5. If the War Committee do not approve of the above policy, it is necessary that an alternative policy (regarding which I have no recommendations to make) should be formulated.

23rd December 1915.

W. R. ROBERTSON, General,
Chief of the Imperial General Staff.

FUTURE MILITARY OPERATIONS.

PAPER SUBMITTED TO THE WAR COMMITTEE BY THE CHIEF OF THE IMPERIAL GENERAL STAFF, 31ST MARCH 1916

1. On 23rd December last I submitted to the War Committee a paper¹ in which I asked them to agree to certain conclusions. Among these conclusions were the following :—

“From the point of view of the British Empire, France and Flanders are the main theatre of operations.”

“Our efforts are to be directed to carrying out offensive operations in the main theatre of war in close co-operation with the Allies, and in the greatest possible strength.”

2. On 13th January the Committee, after considering the above paper, decided that :—

“Every effort is to be made to prepare for carrying out offensive operations next spring in the main theatre of operations in close co-operation with the Allies, and in the greatest possible strength, although it must not be assumed that such offensive operations are finally decided on.”

3. At a meeting of the Allied Commanders-in-Chief, or their representatives, held at Chantilly on 12th March, it was resolved that :—

“The Coalition will undertake combined offensive operations at the earliest possible date. The exact date will be determined by the Commanders-in-Chief concerned.”

4. This resolution and the general military situation were discussed at the Paris Conference on the 27th March, and a translation of the proceedings is given for convenience of reference in the Appendix [which follows]. It will be observed that great value is attached to united action, and in this connection I would point out that on the 21st March the War Committee recommended “that the great importance of close co-operation and concerted action between the armies of the Allies should be pressed by the British representatives at the forthcoming Conference of the Allies in Paris.”

¹ Appendix 3.

5. It is now necessary for the War Committee to decide, at once and definitely, whether they do or do not approve of the resolution referred to in paragraph 3, as it is essential to the proper conduct of the war that the Commander-in-Chief in France should be informed of the decision without delay. My advice is that the Committee should approve. The Commander-in-Chief is acquainted with the present and prospective resources of the Allies in men and munitions; he has all the information we possess in regard to the enemy; and he may, in fact must, be trusted to give full consideration to the nature and extent of the operations which can justifiably be undertaken, and also to the date when they ought to commence. With regard to the latter point, I will verbally give to the Committee all the information I have.

6. If the Committee do not approve of the resolution, it will be necessary to inform our Allies accordingly, and to tell them what alternative plan is proposed.

W. R. ROBERTSON, General,
Chief of the Imperial General Staff.

31st March, 1916.

APPENDIX

EXTRACTS FROM PROCEEDINGS OF CONFERENCE HELD AT PARIS ON 27TH MARCH, 1916.

The sitting began at 10 A.M. M. Briand, President of the Council, Minister for Foreign Affairs for France, presided, and delivered the following speech:

"This meeting, to which I owe the honour of receiving you, will mark a happy date in the evolution of the war.

It will demonstrate the close solidarity of our countries, the confidence in final success, and the firm determination to follow methodically a common and concerted line of action.

It is because he knows the danger which may spring from our co-ordination that the enemy has hurled himself against Verdun, so as to make our offensive impossible, or at least to delay it. Up to the present the enemy has only had to deal with individual adversaries and has not known the total sum of our strength. He has been able to act against each one of us separately, because he has been master of his own actions; and yet he has been unable to obtain a decisive result. He has only met us singly, but all the same he knows that he will not be able to resist our heroic soldiers when they are fighting on one front and following a single impulse.

Victory depends on us and on our concerted action. We must render account not only to our respective countries but to the entire world, to whom we are responsible for the high ideal of justice and liberty. There is only one cause, served by one army, on one front, under one impulse and against a single enemy. If we know how to co-ordinate our efforts we shall soon see victory shine on our colours.

I am showing you in this way the principal object of this Conference. Its aim is to examine the general conditions of the war at the present time and the best means of utilizing our forces in the campaign which is to begin. It is also intended to examine the means at the disposal of each of the allied countries and to ascertain whether the deficit in men, material or munitions in any one of

them can be made good from the surplus which may be found in some other of them. The conditions of a general offensive must also be examined. Our Conference has been preceded by a meeting of the General Staffs at Chantilly at which these questions were examined from a technical point of view ; and it is hoped that we shall derive valuable information from this source. It remains to examine the material means—questions of freight, coal, &c.—which are indispensable to certain of our Allies for assuring the manufacture of guns and munitions.

If you agree, we will devote this first sitting to an examination of the problem as a whole. It would be best if one of the General Officers who took part in the Military Conference at Chantilly were to explain to us the results achieved at this Conference and the decisions which were adopted. It is well understood that everything which concerns purely military questions will remain in the military domain. We shall only have to give our views on general, diplomatic and economic questions. The Conference is free to decide on its order of the day."

M. Briand then called on General Joffre to speak.

General Joffre read the report * of the Conference held at Chantilly on the 12th March.

I.

In delivering battle under the walls of Verdun, Germany has reverted to the first phase of the European war. What was her aim ? To defeat France in order afterwards to turn, if necessary, against each of the other armies of the Entente and to destroy them.

Although the reserves which the enemy is able to move from one front to another are gradually diminishing in number and in quality, the effort which Germany made against Verdun was impressive in its violence and she still possesses means to continue it.

If Germany has suffered, she has had faith up to the present in her final victory. She regards the trials which she has undergone as the ransom of future glory and she will support still harder trials if her confidence remains unshaken. We may even believe that, in such case, she will not yield to economic and financial measures of restraint, however useful and necessary they may be.

We have to destroy the morale of the German Army and nation and beat it down by military successes which will eradicate from the minds of the enemy all hope of success.

The question is, how is this to be done in the present state of the Coalition ?

II.

On the main fronts the military situation is characterized by the check, at least temporary, of the attack on Verdun. The enemy's moral force, which is the true source of his strength, has been enfeebled, and his confidence in final victory has already been shaken. The German General Staff from this moment is forced to modify its plans.

First hypothesis.—They may persevere in their undertaking and attempt at any cost in France, in default of a definite decision, the conquest of some outstanding objective which may raise the sinking confidence of the nation.

* This is not correct. He merely based his statements on what passed at the Conference.—W.R.R.

In this case they will bring their remaining reserves into action, either against Verdun or on some other part of the Western front, so as to make an end of the French resistance. They may hope in this way so to exhaust our reserves that we may be able to participate only feebly in the general offensive with which they feel themselves threatened. It is true that in compensation they will be able to offer only a weakened resistance on the British and Russian fronts ; but the result which they would have gained would be none the less of capital importance for consequent operations which it is to the great interest of the Coalition to avoid. If they fail they will be morally beaten.

Second hypothesis.—If, on the contrary, their attacking units are so weakened that they fear that they will be able to oppose to the general offensive of the Allies nothing but disorganized or insufficient forces, or if the pressure which the British and Russians are preparing to bring to bear on them in order to relieve the French Army causes them anxiety, then they will suspend their attacks and adopt a defensive attitude on all their fronts.

This attitude would perhaps be most in conformity with the enemy's true military interests, but it would be fraught with singular danger to the moral of the German people, above all if the economic situation of Germany becomes more and more difficult.

Whatever the decision to which the enemy may come, the line of military action which the Coalition must adopt is that defined at the Conference of Commanders-in-Chief which was held at Chantilly on the 12th March.

In the first case, the general offensives will begin gradually on each front, having regard to the capabilities of the Allied armies (preparation of attacks, concentration of material, climatic conditions, &c.).

In the second case, the concentric and concordant general offensive of all the allied armies will begin on the date which is judged to be the most favourable by the Commanders-in-Chief, and will be fixed by them.

However that may be, in ignorance of the enemy's plans, and in accordance with the conclusions of a previous Conference, the Allies have made concerted efforts to strengthen the resistance offered by the French Army to the enemy's attacks in the Verdun region.

Great Britain has relieved one of our armies and has thus enabled us to reconstitute those of our reserves which were depleted in front of Verdun. In addition she is preparing to make a diversion by attacking on a part of her front.

Italy has delivered local attacks on the Isonzo, and Russia has undertaken an offensive of the same nature on the northern portion of her front.

In the Balkans the military situation has been modified in our favour. Thanks to the presence of our Expeditionary Corps at Salonika, as well as to the Russian successes in Armenia, a sort of equilibrium has been established which is favourable to the interests of the Entente.

Turkey is neutralized.

Bulgaria supports impatiently the prolongation of the war.

Greece is absolutely dependent upon us.

Roumania, without having definitely taken sides, is developing precautionary measures on her Austrian and Bulgarian frontiers.

It is not possible to increase the French and British military effort in this theatre: since on the one hand all the British and French forces are needed in France; and on the other hand material difficulties (insufficiency of means of maritime transport, &c.) at present render impossible in the Balkans operations requiring the employment of much more numerous effectives than those which are there at present. The Expeditionary Corps will, therefore, not receive any other reinforcement than that of the reconstituted Serbian Army. Its rôle, which is already to conceal our real intentions and to immobilize German and Bulgarian reserves, will become more active at the moment of the general offensive. If, however, the Balkan situation were profoundly modified in our favour (by the accession of new Allies, or by the secession of Balkan belligerents), the Army of the East would take the offensive at an opportune moment.

III.

Everything leads to the belief that if the general offensive which the Coalition has decided to take shortly is successful, a happy ending of the war will quickly follow. It is, therefore, necessary to strain all the efforts of the Coalition for the supreme battle and to gain the necessary victory by a common impulse.

France cannot at the present moment do better than defend her national territory foot by foot while economising her effectives as much as possible and preparing her future offensive.

Russia, Italy and England must concentrate their greatest strength in men and material in the principal theatre of operations, and push to the utmost and in the shortest time their preparations for those attacks in which their last man and their last gun will be engaged. In particular, it would be desirable for Great Britain to bring as quickly as possible to the French front all those forces which are not indispensable in other theatres of operations.

The hour has struck in which to apply the doctrine of the concentration of efforts which can never be undertaken without incurring certain risks in theatres of secondary importance. A victory in France would re-establish everything everywhere.

In order to achieve this result the Conference between the allied General Staffs, held at Chantilly on the 12th March last, adopted the following resolutions after having examined the state of the resources of the allied armies in men, material and munitions.

1. The Coalition will undertake its combined offensives with the least possible delay. The exact date will be fixed by the Commanders-in-Chief.

2. The Serbian Army will be transported to Salonika as soon as possible.

The constitution of the Army of the East will undergo no change at present; the question will be raised again and will be answered in accordance with the course of events. The Anglo-French forces will be organized as far as possible for mountain warfare.

3. The Army of the East and the Italian forces in Albania will keep the threat of an offensive before the enemy. Their future conduct will be governed by the situation.
4. The Conference express the wish that the economic blockade of Germany may be tightened in every possible way.

M. Briand asked whether any of the members of the Conference wished to speak on General Joffre's statement.

As no one wished to speak, *M. Briand* continued that the most important question to be discussed was that of the gaps which might be found, or the needs which might be experienced, in one or other of the Allied countries.

If in view of an offensive or of a general effort, one of the allied countries found itself unable to face the situation on its own resources means of supplying this want must be sought.

General Cadorna said that is precisely the position of Italy. Italy has not at present enough heavy artillery to correspond with her effectives. All operations which have been carried out up to now have shown that considerable heavy artillery was needed. Italy has increased her production but not yet sufficiently. Acting on the principle that there is only one front she has given the Russians 400,000 rifles, but has been compelled to ask for heavy artillery from the French and English Governments. If the Italian Army were as heavily attacked as is the French Army at Verdun they would not have enough heavy artillery.

This is a cardinal point. Those countries which can help Italy must. In the interests of common action an effort might perhaps be made in the other countries to make good this want of heavy artillery in Italy.

General Joffre admitted that this question had been put to him by General Cadorna. Italy's request had been passed on to the Munitions Department.

M. Albert Thomas said that, being in agreement with General Joffre and desirous of helping the Italians, he had gone into this request with the greatest attention, and had considered the handing over of a certain number of 120 mm. guns. It was not yet possible to fix their number, but it would appear that France could give 60 heavy guns. That would not meet all the demands of the Italian Army, but it was a considerable assistance.

General Joffre added that some 95's had also been offered to Italy.

M. Briand said that, as far as France was concerned, she was determined to do her utmost in the interests of the Allies; but she had been compelled to mobilise almost all her fit men; she lacked labour, and yet at the same time had to consider extending her production of munitions. If any of the allied countries were in a position to make up this shortage, France would be glad to be helped and nothing but good for everybody could result. If, for instance, Italy could supply labour, France would accept it gratefully, and Italy herself would be the first to benefit thereby.

General Joffre declared that at this moment French factories were making material of every kind, but that they could do better still and increase their production of 75's if they had more labour at their disposal.

M. Albert Thomas asked leave to speak briefly of the French position in regard to munitions. The Allies would recognize that France had already made a great effort, and had made up her mind to continue it. The arrangements which had been made would permit of working for the French Army, and at the same time of meeting a share of the Allies' demands. But France could utilize the services of 100,000 more workmen and is trying in different directions to get them.

General Joffre had given up to the military arsenals every man he could spare short of endangering national defence. Attempts had been made to get colonial labour, and suggestions had been made to bring Chinese workers. France was making her maximum effort but wished, if possible, to help the Allies even more. It is for this reason that M. Albert Thomas pressed the suggestion that Italy and Russia might help France. He knew it was difficult to get skilled labour, but along with skilled labour there was the great mass of unskilled workmen who were to be found in wartime on every quayside. Would it not be possible to get Italy's help in this time of war? He had been assured that the emigration laws hindered this recruiting but could not some modification be made in their application?

M. Albert Thomas put the matter to the Italians and the Russians.

M. Sonnino declared that Italy could at present provide very few skilled workmen: she herself was short of them. All she could do would amount to nothing because, if Italy gave up skilled workmen, private firms would make that an excuse for not fulfilling contracts with the State. As for ordinary labourers, no doubt a few could be found. The Emigration Commission has already been applying the emigration law with considerable latitude to all those who were under no military obligation. Italy might be able to supply a certain number of workmen free from all military obligation, *i.e.*, men over forty, if certain guarantees could be given them and if favourable conditions of work in France could be assured to them. But this supply would be very limited because Italy is compelled to make big earthworks, especially on the Swiss frontier. At present more than 100,000 labourers were working behind the front.

M. Albert Thomas had admired the 100,000 Italian labourers working for the Army, and had hoped it would be possible to get some tens of thousands of them to increase the production of arms and munitions in France. Labourers were wanted to erect large powder mills in the south, and it would be a very desirable thing to establish with the Italians an agreement similar to that concluded with the Belgians which had produced such excellent results to both countries, a share of the production being reserved for Belgium.

M. Salandra showed that it was not possible to compel Italian labourers to work abroad, and that the only result of a liberal application of the restrictions on emigration would be to facilitate the recruiting of the labourers.

M. Sonnino pointed out the great differences existing between different parts of Italy: in certain provinces there was a shortage of labourers, while in others a certain number might be obtainable. The Italian Ministry of Foreign Affairs had no doubt but that it would be possible to obtain several thousands if favourable conditions were offered.

M. Briand insisted that there was no question of compulsion, but simply making it easy to get Italian labourers.

M. Albert Thomas agreed as to the method of procedure. The only question could be of making it easy to get Italian labourers, but the Italian emigration law is severe, and, to be able to recruit labourers in Italy, it would be desirable to introduce some modifications in its application.

Mr. Lloyd George explained that the position of England is very different from that of the other Allies and that it is especially difficult. At the beginning of the war Great Britain had a small Army and a powerful Fleet. Every effort had been made to develop the Navy and to meet its requirements. At the present moment more than 2,000,000 men were working for the Navy. England finds herself handicapped, in a certain sense, by her enormous Navy, but it must not be forgotten that this Navy secures for all the Allies the command of the sea. The Army, on the other hand, small as it was at the beginning of the war, has continued to grow larger, and the British Government is doing all it can to supply its needs. It was only possible to commence the manufacture of heavy artillery last summer; the first orders were placed in July, for before it was possible to construct the guns it was necessary to build factories, buy machines, and train workmen. At the end of the year England will have all she wants, and will, moreover, be able to assist Russia and Servia, but she is confronted by the same difficulties with which France is beset, namely, the question of labour. This will explain why machine guns, which should have been constructed for Italy, have not yet been made, owing to the impossibility of sending the 6,000 workmen which the Italian Government had promised.

Mr. Lloyd George urged that each of the Allies should make every possible effort to develop the manufacture of guns and ammunition and that it should be decided later on where they could best be sent.

General Gilinsky stated that Russia, too, was in great need of material and ammunition, but that what she is needing most is heavy artillery. In Russia difficulties of transport are added to the difficulties felt in France and England as regards manufacture and supply. Thus the guns given by France have not yet reached their destination. If the French Government could increase the number of guns promised to Russia, the Imperial Government would be very grateful. The attack of fortified positions has become very difficult, unless the attackers are in possession of powerful heavy artillery. Russia is also in want of rifles. Italy has, it is true, let her have 400,000, but these arms are not of a very recent pattern and they have been sent to the dépôts to be used for the instruction of recruits. The Russian Government has ordered a large number of rifles in America, but owing to difficulties of transport they have not yet reached their destination. Neither are cartridges in sufficient number, notwithstanding all the efforts made by Russia to increase the output of her factories. It has been remarked that the Russian armies have expended a much greater number of cartridges than the other allied countries—that expenditure has been caused by the want of heavy artillery, which has necessitated more frequent infantry action. Finally, Russia is without certain metals: some of these have been promised her by France, but others, such as mercury and brass, are not to be found in France, and Russia appeals to her Allies to procure them for her.

M. Isvolsky begged permission to add a few words to the above, in order to point out that if the Allies had to wait, as suggested by *Mr. Lloyd George*, until the manufacture of guns and ammunition was finished before proceeding to distribute them amongst the Allies, Russia would find herself in a particularly difficult situation owing to the long delay caused by transport.

The Russian Ambassador considered that this question might be at once examined by the various General Staffs.

M. Isvolsky added that with regard to the labour question he was not in a position to furnish the Conference with precise details, but that this question has already been dealt with by the two Governments and that he would not fail to bring the views of the Conference to the notice of his Government.

Lord *Kitchener* laid stress on the fact that the output of the English factories will scarcely suffice to meet the wants of the British Army during 1916, and that it would be only in January next that England would be able to supply the Allies with heavy artillery.

M. *Briand* stated that the result of this exchange of opinions was that in certain countries there was a shortage of guns and munitions, while in France the possibilities of manufacture were very great, but were not wholly exercised for want of labour. Thus a very interesting situation arose which might lead to an exchange of material and men among the Allies. France would be able to supply heavy artillery to Italy and Russia if she could obtain the labour she lacked from among the Allies. The battle of Verdun had, it is true, worn out a certain number of guns, which would have to be replaced, but when this replacement had been made it would be possible to produce from our factories a larger number of heavy guns if we had sufficient labour. Thus it is important that this problem should be solved; its results would be of benefit to everybody, if the other Allies would use some persuasion in certain directions to facilitate recruiting of labour, and it would be in Italy's interests to study this question along with France.

M. *Sonnino* insisted once more on the difficulties of the problem, and although the number of workmen obtainable was much lower than was believed, Italy is not on that account any less disposed to consider the problem, always with the reservations of military necessities and the needs of agriculture.

M. *Briand* urged the Belgian authorities to use persuasion so that suitable men who were at their disposal in France should agree to work in French factories so as to increase their production.

M. *de Brocqueville* would ask nothing better than to respond to the appeal of the President of the Council, but he must remind them that the majority of his compatriots were already employed in Belgian and French factories. The Belgian authorities had listed the names of workmen who might still be utilized, and they had evidence that, as far as 17 departments which had been enumerated were concerned, the number of Belgians unemployed amounted only to 393, of whom more than 100 were old men. The Allied Governments might rest assured that they had all the goodwill of the Belgian Government, and that the latter would do its utmost to provide them with all the Belgian labour at its disposal. M. *de Brocqueville* suggested that an agreement might be made between the French and the Allied Governments similar to that between the French and the Belgian Governments. Thus, for example, out of 1,000 working hours provided by Belgian workmen in French factories, 600 were spent on the manufacture of 105-mm. guns for the Belgian Army.

M. *Briand* proposed to form a sub-committee from among the members of the Conference to study the whole question, and to seek means of arriving at a speedy solution. He mentioned at the

same time the questions affecting the manufacture of munitions, viz., coal and freight. He remarked in passing that the freight question has assumed a disquieting character in France, and in Italy has become almost acute. It was important to get the help of England to find some means of avoiding a crisis.

INSTRUCTIONS

FOR

GENERAL SIR D. HAIG, G.C.B., K.C.I.E.,
K.C.V.O.

COMMANDING THE EXPEDITIONARY FORCE IN
FRANCE

1. His Majesty's Government consider that the mission of the British Expeditionary Force in France, to the chief command of which you have recently been appointed, is to support and co-operate with the French and Belgian Armies against our common enemies. The special task laid upon you is to assist the French and Belgian Governments in driving the German Armies from French and Belgian territory, and eventually to restore the neutrality of Belgium, on behalf of which, as guaranteed by Treaty, Belgium appealed to the French and to ourselves at the commencement of hostilities.

2. You will be informed from time to time of the numbers of troops which will be placed at your disposal in order to carry out your mission, and in this connection you will understand that, owing to the number of different theatres in which we are employed, it may not always be possible to give the information definitely a long time in advance.

3. The defeat of the enemy by the combined Allied Armies must always be regarded as the primary object for which the British troops were originally sent to France, and to achieve that end the closest co-operation of French and British as a united Army must be the governing policy ; but I wish you distinctly to understand that your command is an independent one, and that you will in no case come under the orders of any Allied General further than the necessary co-operation with our Allies above referred to.

4. If unforeseen circumstances should arise such as to compel our Expeditionary Force to retire, such a retirement should never be contemplated as an independent move to secure the defence of the ports facing the Straits of Dover, although their security is a matter of great importance demanding that every effort should be made to prevent the lines which the Allied Forces now hold in Flanders being broken by the enemy. The safety of the Channel will be

decided by the overthrow of the German Armies rather than by the occupation by our troops of some defensive position with their backs to the sea. In the event, therefore, of a retirement, the direction of the retreat should be decided, in conjunction with our Ally, with reference solely to the eventual defeat of the enemy and not to the security of the Channel. Notwithstanding the above, our Expeditionary Force may be compelled to fall back upon the Channel Ports, or the circumstances may be such that it will be strategically advantageous that, while acting in co-operation with the French Army, it should carry out such a retirement. The requisite steps required to meet this contingency should therefore receive attention.

5. In minor operations you should be careful that your subordinates understand that risk of serious losses should only be taken where such risk is authoritatively considered to be commensurate with the object in view.

6. You will kindly keep up constant communication with the War Office, and you will be good enough to inform me regarding all movements of the enemy reported to you as well as those of the French Army.

7. I am sure that you fully realise that you can rely with the utmost confidence on the whole-hearted and unswerving support of the Government, of myself, and of your compatriots.

KITCHENER.

The War Office,
28th December 1915.

ORGANIZATION AND EXECUTION OF A RAID

CARRIED OUT BY THE 5TH AND 7TH CANADIAN BATTALIONS, 2ND CANADIAN INFANTRY BRIGADE (BR.-GENERAL L. J. LIPSETT), NOVEMBER 16TH-17TH, 1915.

1. The objects of the operation were :—
 - (i) To obtain prisoners for identification.
 - (ii) To cause the enemy loss by inducing him to move up his reserves and thus offer a good target.
 - (iii) To decrease the moral of the enemy.
2. The patrols of this brigade having been very active for a considerable period, the enemy had been compelled to abandon his listening posts and seldom ventured over his parapet. The domination by our patrols was of great value as, in order to attain the foregoing object, surprise would be necessary to secure a footing in the enemy's main trench.

This patrolling proved of further value in making the battalion scouts and others taking part in the enterprise entirely familiar with the intervening ground in all its detail and accustomed to being outside our wire.
3. It was decided to make two separate but simultaneous attacks with the following objectives :—
 - (i) The Left Attack : On the south-west corner of the Salient at La Petite Douve Farm a very strong work.¹ The reasons for the selection of this objective were as follows :—
 - (a) A covered line of approach existed along the right bank of the Douve River. (The river here at this season is normally about 10 ft. wide with water 3 to 4 ft. deep ; the adjoining ground forms a slight depression and the banks are bordered in places by low bushes.)
 - (b) This portion of the salient, about 75 yds. in length,

¹ The map co-ordinates given in the original are omitted. La Petite Douve Farm is a thousand yards south of Messines (see " 1914 " Vol. II. Sketch A).

fronting West, could only be enfladed by the enemy from the left where the farm buildings overlook it.

- (c) It was sufficiently near to be reached by our trench mortars and grenade rifles.
 - (d) There were three routes of withdrawal all screened from view.
 - (e) This locality had been heavily bombarded by our artillery several times before without an attack following.
 - (f) The wire here was strong in front, and in addition was protected by Douve River thus giving a false sense of security.
- (ii) The Right Attack : On that portion of enemy's trench immediately south of Douve River.
- The reasons for the selection of this were as follows :—
- (a) A line of approach screened from view by hedges and ditches was obtainable.
 - (b) It was a particularly strong point in the enemy's line.
 - (c) It was at such a distance from the point selected for the left attack as to give the enemy the idea that the attack was over a comparatively wide front.

4. As soon as the attack was decided on the officers and men were picked, being selected from volunteers the latter largely from the company which would be in support trenches and these were quartered together for a week in a good warm billet close in rear of the front line, and were excused all other duties. The men forming the bombing parties were from the Battalion platoon of the Brigade Bombing Company.

A facsimile of the hostile trenches was laid out in a field which lent itself to adaptation and over this the attacking parties worked by day and by night ; bombing attacks, blocking and the final retirement all were practised. All men detailed for the attack were also taken out by night by the scouts in small parties over the actual route between the lines which they were to follow. Bridging ladders were built, tested and practised with. The men were also practised in crossing wire with traversor mats. The men entered into all this constant practice with the same relish as if training for a football match.

5. The left attack, on Petite Douve, was organised as follows :—
- (1) Wire cutting party (Scouts)—
1 Officer and 4 N.C.Os.
 - (2) Left Bombing and Blocking Party.
1 Officer.
2 Bayonet Men.
2 Throwers.
2 Carriers.
1 Spare Bomber.
4 Wire men (carrying 20 bombs each).
2 Shovel men (carrying also 20 bombs each).
Total : 1 Officer, 18 men.
 - (3) Right Bombing and Blocking Party.
1 Officer.
3 Bayonet men.
2 Throwers.

- 2 Carriers.
 1 Spare man.
 2 Wire men (each carrying spool of wire and twenty bombs).
 2 Shovel men (Each carrying 20 bombs ; no rifles).
 Total : 1 Officer, 12 men.
- (4) Bridge Covering Parties.
 Right 3 }
 Left 3 } Total 6 Riflemen.
- (5) Trench Rifle Party.
 1 Officer (O.C. of Assault Party).
 5 Riflemen.
 1 Telephonist with instrument.
 1 Lineman.
 2 Stretcher bearers.
 Total : 1 Officer, 9 men.
- (6) Listening Post Support Party.
 1 N.C.O. and 10 men.
 1 Telephonist with instrument.
 1 Lineman.
 Total : 13 men.
- (7) Trench Reserve Party.
 2 N.C.Os. and 20 men.
 Remained in trench.

TOTAL :—Assaulting Party . . . 3 Officers, 34 men.
 Scouts and on Bridges, 1 Officer, 10 men.
 Support and Reserve, 33 men.

The Right Attack was organised in a similar manner and was worked in unison in all respects.

6. The following details were worked out and precautions taken in preparation for the attack :—
- All marks of identification on clothing, equipment and articles carried on officers and men were removed. (No Ross rifles or other Canadian equipment were carried.)
 - Veils of crepe were provided as masks for officers and men taking part in the assault to prevent faces showing in dark and to distinguish our own force.
 - Electric pocket flash lamps were attached to rifles of bayonet men, bound on by telephone wire just below lower band : they were bought locally and were short flat type with new and tested batteries.
 - Spools of wire for entanglements were prepared to be used in blocking trenches.
 - Bombs were sacked up, 20 in each sand bag.
 - Revolvers and wire cutters were provided for those requiring them.
 - A route was prepared by bridges, etc. over our rear trenches and marked by white stakes, direct from the working billet to the point of exit in front of trench.

In general : So completely were all these small details arranged that when the night of attack came everything and every party was in its place to the minute.

7. The river Douve had been in flood and was subsiding at such

a rate that the attack had been fixed for the night of the 15th-16th but being then still too high it was postponed 24 hours. (The river a few days previous had been 20 to 30 ft. wide and 8 to 10 ft. deep and by the night of 16th-17th had regained normal.)

The moon was 4 days before the full on the night 16th-17th and the cold weather having made hoar frost the hour of attack was further postponed from midnight until 2.30 A.M., about an hour after the moon had set. The scouts however had to work at wire cutting and bridging in the early night but while they had the advantage of frequent clouds over the moon they had to avoid the rustle of frosted grass.

8. On the 16th the Artillery started at 9 A.M. to cut wire at several points along the line in addition to those selected for the attack. The enemy's front line and the communication trenches in rear of point of attack were also bombarded by a howitzer brigade.

A Trench Mortar Battery bombarded Petite Douve Farm and a machine gun emplacement during the afternoon and fired occasionally during the night.

Machine guns were detailed to co-operate with the trench mortar battery and especially to cover the preparation of the assaulting parties by firing on the flanks and targets in rear.

During the afternoon and evening our snipers, rifle batteries and grenade rifles were also active.

During the early part of the night slow rifle fire was kept up on the flanks of the localities where the attacks were to be delivered in order to cover the noise made by the scouts cutting wire and bridging.

9. At 4 P.M. the scouts went out to examine the wire cutting. Owing to trees alongside the Douve having interfered with the bursting of the shells it was found that the wire was not cut in front of the objective selected for the left attack; that for the right attack was reported as cut. It was therefore decided that the wire opposite the left attack could not be crossed by traversor mats and should be cut by hand. Four scouts accordingly proceeded to do so after dark. They cut quietly and steadily from 9.15 to 11.45 P.M., working when the moon was clouded over and remaining perfectly still when it was bright. They made two complete lanes diagonally through the German wire mostly within 30 feet of the parapet. The noise of this work was somewhat drowned by the desultory rifle fire: the shadows of the trees amongst the wire also assisted the men's movement. They wore leather gloves and used parrot wire cutters, using the gloves to deaden the sound; fresh gloves were supplied several times. They lay flat and one man cut while another held the ends of wire and manipulated it. Hot cocoa was supplied to them during this work.

The patrols placed the bridges across the Douve early in the night, the four men on each working when the moon was clouded. As each bridge weighed about 60 pounds this was a slow and difficult task but all bridges were in position by 2 A.M. This work was superintended by the officer in charge of the wire cutting. Various bomb depots were established between the two lines during the same time as wire cutting and bridging.

10. The right attacking party left the British trench shortly before 2 A.M. and moving under cover of the hedges got up to

and through the wire which they found well cut on a front of twenty yards. On the party advancing, however, at 2.30 the five leading men fell into a ditch with water and sunken wire, immediately in front of the German parapet. This was evidently back water from the river Douve and had been invisible to the patrols who had reconnoitred this locality previously. The men were got out with difficulty, during which time the enemy opened rifle fire, which however was stopped by our men kneeling down and vigorously bombing the trench. The scouts could find no other way into the German trench so the party retired. They suffered no casualties.

11. The left attacking party left the British front line trench at the times and in the order following :—

Left bombing and blocking party	.	.	1.45 A.M.
Right bombing and blocking party	.	.	2.00 A.M.
Bridge covering parties	.	.	2.05 A.M.
Trench rifle party	.	.	2.08 A.M.
Listening post support party	.	.	2.15 A.M.

The column, its various parties guided by a scout, moved by the right bank of the Douve and was led across to the left bank over the bridge nearest the German line, which consisted of two bridges, as shown in sketch,¹ laid side by side. The two parties went swiftly through the lanes cut in the wire.

At 2.32 A.M. the assaulting party entered the enemy's front line trench, the officers leading and jumping in on a crouching sentry who was taking shelter from a shower of rain which had just started. This man was shot on the spot by the officer of right party while the officer of left party shot three more then turned and bombed down the trench for three bays till joined by his party, after which they pulled or bombed the Germans out of their dug-outs or drove them into communication trenches. The officer of the right party—a footballer—after shooting his first man and anxious to make prisoners seized the next man and taking his rifle clubbed a third, after which his party joined him and they started down the trench; their party secured eight of the twelve prisoners.

At 2.34 A.M., the telephone having been established in the German trenches, a message was received by the O.C. Battalion in the front British trench that the party was "in and all going well".

The blocking parties carried out their tasks promptly in the front and communication trenches and the trench rifle party covered the latter to stop any sudden local counter-attack. The total length of front trench occupied was about 40 yards.

In the meantime the prisoners and their equipment were passed quickly over the parapet to the scouts and a detail from the rifle party. The largest prisoner was taken by the smallest sergeant.

The whole operation went very smoothly. There was no confusion and no shouting on the part of our men and after 19 minutes of very active work in which it is conservatively estimated 30 of the enemy were killed and wounded the signal

¹ Not reproduced.

whistle blew for the retirement and the assaulting party assembled and withdrew with 12 prisoners.

The retirement was carried out deliberately according to programme, the prisoners having been sent back in advance. The parties returned by the same route taking up all bridges but one and collecting all the spare bombs and telephone equipment, etc. The remaining bridge was brought in the following night.

Our casualties in this attack consisted of one man killed accidentally by the firing of a rifle when another man stumbled and one slightly wounded.

When our withdrawal was complete, our Artillery which had been maintaining a barrage on the rear of German trenches, shortened on to the German front trench to get any of the enemy who might be assembling for counter-attack and later our heavy Artillery opened on the roads still further in rear.

12. The enemy evidently thought his front line badly pierced by the left attack. He appeared to evacuate the Petite Douve Fort when the attack commenced as the rifle and machine gun fire and flares from there were at first very active and then ceased ; they afterwards came from the support line in rear.

The enemy did not seem to know from what direction he had been attacked as all his fire was directed down the Messines Road probably due to the activity of the bombing by the right attack at the Douve River.

During the time our assaulting party was in their trench the enemy made no organised resistance, except a very weak local bombing attack which was promptly dealt with by the officer and two men of left party. There did not appear to be any attempt at organisation ; no officers were seen or heard and such non.-coms. as may have been present did not display any initiative or leadership.

When nearly 40 minutes had elapsed after the retirement of our party the enemy commenced a determined counter-attack, moving forward steadily on both flanks and from his support line bombing as he came. Our Artillery then suddenly dropped to the front line as pre-arranged and this doubtless caused considerable additional casualties besides those of the wounded probably disposed of by the enemy's own bombing.

The enemy's artillery at the same time retaliated on our lines between our front and support line forming a barrage apparently thinking our supports still coming.

13. The objects of the operations were all attained to a full extent. The attack was a complete surprise and although the enemy had been standing to the evening before, had evidently concluded no attack would be made.

12 prisoners were obtained which gave most excellent identifications and with their equipment—notably the new rubber gas mask—afforded much valuable and timely information. The short time our men were in the trenches afforded an opportunity as well to learn much about their construction.

The casualties in the enemy's ranks during the assault alone were undoubtedly large in proportion to the operation and averaged at least one for each man of the attacking party engaged—in addition to prisoners. The other casualties by bombardment

before and after and by the enemy's own bombing can only be surmised.

The morale was undoubtedly considerably decreased as was evidenced by the prisoners' statements and by the enemy's actions afterwards in this locality and elsewhere along the adjacent front.

14. The lessons to be learnt appear to be more negative than positive. The whole operation of the left attack went so smoothly and was carried out so entirely in accordance with the prearranged plans that even the Commanders immediately concerned are unable to suggest any improvement.

Positive Lessons :

The success appears to be due to the following :—

- (a) First class diligent scouting, as a result of which a distinct moral superiority had been obtained and the chances of discovery greatly reduced.
- (b) Careful selection of personnel, careful study and arrangement of every detail connected with the organisation of the attacking parties and the material required for the operation.
- (c) Careful training and rehearsal over similar ground and preparations to meet every contingency.
- (d) Good artillery co-operation and utilization of all methods of attack and surprise to the same end.

Negative Lessons :

Although the enemy's trench was very strong and was heavily manned (about 8 men per 10 yards in the front line) and despite the bright night and other conditions favourable to them, the enemy absolutely failed to meet the attack. His failure appears to have been mainly due to the following :

- (a) Complete lack of active patrolling and the surrender of the initiative.
- (b) Lack of protection by listening posts.
- (c) Bad discipline. Sentries too few and not alert. (The sentries allowed to take cover from the rain.)
- (d) Lack of co-operation between adjoining sections. Immediate local counter-attack was not attempted outside of our blocks.
- (e) Lack of initiative by N.C.Os. and men when officers absent.

ORDERS FOR A SMALL OPERATION

36TH INFANTRY BRIGADE ORDER NO. 79

BY

BR.-GENERAL L. BOYD-MOSS

Headquarters,
1st March 1916.

1. On the 2nd March three mines will be exploded about 5.45 P.M. **Sketch 8.** close to the Chord. The positions of the craters which will probably be formed by those mines are marked on the attached Map A, B, C. A small mine will also be exploded on the North side of Crater No. 2. Immediately these mines have been exploded, the craters formed, and the Chord will be occupied.

The 9/R.Fusiliers will attack the Chord from its junction with Big Willie to a point midway between C.3 and C.4 and will occupy Craters Nos. 1, 2 and A.

The 8/R.Fusiliers will attack the Chord from a point midway between C.3 and C.4 to Crater B and will occupy Craters B and C and No. 4.

2. Communication.

The 9/R.Fusiliers will have the use of all trenches South of, and including Bart's Alley and the Sap running up to Crater No. 3.

The 8/R.Fusiliers will have the use of all trenches North of Bart's Alley (exclusive).

Detail. 9/R.Fusiliers.

3. The Chord. The assault on the Chord from Crater A to midway between C.3 and C.4 will be delivered immediately after the explosion of the mine, by 50 men under an officer advancing with fixed bayonets from West Face.

Ladders will be provided in West Face, and the Hog's Back¹ will be bridged.

These men must be active men specially selected. They will be lightly equipped. Every man will carry a bomb belt with 5 grenades in it, to use in case of emergency. Half the men will carry wire cutters—men with cutters to be in groups of three.

¹ The trench shown as a broken line between Craters Nos. 2 and 3.

The six men on either flank will be organised as grenade squads with trained grenadiers—the two carriers with each squad carrying 20 grenades each.

The assault must be delivered immediately the danger of injury from the falling earth is over, and before the dust and smoke have cleared away. Everything depends on taking the enemy by surprise.

The wire in front of the Chord is a very formidable obstacle. It will probably be crossed without any difficulty where it is covered by the fallen earth from Crater A. The right grenade squad will cross it at this point and will at once bomb along the trench to the left if the enemy is offering any resistance and holding up the advance of the remainder of the attacking force.

These grenadiers must remember that every grenade which does not burst in the trench may possibly injure one of the attacking force. They should therefore only bomb just over the next traverse, and should push on with the greatest possible speed, as it is unlikely that the enemy will be able to offer much resistance to a bombing attack at the same time as they are engaged in repelling a frontal attack.

As soon as the left grenade squad has entered the trench, if its assistance is not required by the battalion on its left it will proceed down C.3 for about 70 yards and will hold the trench against any German reinforcements sent up, until the working party has effectually blocked it.

From air photographs, C.3 does not appear to be much used by the enemy. Opportunity may occur to assist the party in C.4 by throwing grenades across.

On reaching the German wire, each group of men, with wire cutters will at once cut a gap through the wire starting in the centre of a bay. This must be done in a prone or kneeling position so that they cannot be seen by the enemy in the second line of trenches (Cross Trench).

The rest of the assaulting party will lie down ready to shoot any German who puts his head above the parapet.

If grenades are thrown by the enemy the men with wire cutters must be protected by grenades thrown into the trench. Care must be taken that every grenade is thrown well over the parapet.

If any thick iron wire is met with—this can usually be broken by the "wire breaker" which is used on the rifle. One of these will be taken by each group of three men.

Directly any men obtain a footing in the trench their first duty is to help their comrades on their right and left by clearing the trench of Germans. In the same way assistance will be at once rendered to the other battalion if required.

4. Supporting Party.

As soon as the attacking force has left West Face the supports will double into West Face and take their places at the ladders.

The support will consist of 35 men who will be formed up in Bart's Alley with the head of the party at the junction of West Face and Bart's Alley. The six men on the left (i.e. the rear when formed up in Bart's Alley) will be organised as a grenade party. On reaching the German trench they will be stationed at the junction of C.3 and the Chord.

Every man of the support will carry 20 grenades packed in two sandbags and slung over one shoulder.

Every man including the grenade squad will carry 20 sandbags rolled on the back and also a pick or shovel. 20 picks and 15 shovels.

The ten men on the left (excluding the grenade squad) will be detailed to block C.3 and will completely destroy the trench for at least 25 yards behind the piquet established by the grenadiers.

The officer commanding the support will give the order to advance as soon as all his men are in position at the ladders.

5. Consolidation.

Directly all resistance has been overcome the position will be at once consolidated.

All the troops in the Chord will at once construct temporary fire steps with a few sandbags taken from the German parapet. As soon as every man can get into a position to fire he will proceed to make a properly constructed fire step. In cases of emergency the German fire step can generally be used. It is nearly always possible to see over the parapets from it. When the new fire step has been completed, the German one must be absolutely destroyed.

An emplacement for a Lewis gun will be made at the angle 20 yards south of C.3 so as to bring enfilade fire to bear across the front of Crater A.

All communication trenches (C.3 and C.4) will be blocked for a length of at least 25 yards, starting from a point 60 yards from the Chord, the trench being absolutely destroyed to a point about 35 yards from the Chord. This work will be carried out by specially detailed working parties which will come up with the support, and their work will be covered by a party of grenadiers piqueting the trench.

When the work is completed the grenadiers will be withdrawn to a point near our end of the block, where cover will be provided for them.

Parties of grenadiers will be stationed in the Chord at the junction of C.3 and C.4 with the Chord.

Grenade stores will be made at the junction of C.3 and C.4 with the Chord and also at the points where the Chord reaches the earth thrown up by Craters A and B.

All the grenades which are brought up by the support are to be placed at once in these stores. Grenades carried up in the grenade carriers worn by the men will not be put in these stores.

When the fire step has been completed every endeavour must be made to put up wire in front. As soon as the officer commanding either section is ready for wiring, guides will be sent to the advanced R.E. dumps where carrying parties will be in readiness to bring up the materials.

If possible, use will be made of the German wire. Any of the German wire which it is impossible to use must be absolutely destroyed.

Immediately the trench is captured any wire or fuze leading down to a mine gallery or along the trench is to be cut.

Communication trenches are to be cut through the earth thrown up by Craters A and B. The garrisons of the craters will assist in this work. Care must be taken that these communication trenches are not enfiladed—this applies to Crater B in particular.

6. Crater A.

Crater A will be occupied by a party of 30 men under an officer. They will be formed up in Kaiserin Trench, from Savile Row to a point midway between Sap 9¹ and Savile Row.

Every man will carry a bomb belt with 5 grenades. The men will not fix bayonets. The last 10 men will carry shovels and 20 grenades each. Four men will take sniper-scopes. Every man will carry 20 sandbags rolled on his back. All the men of this party should be good shots.

As soon as the earth thrown up by the mines has all fallen, the party will double along the trench to the ramp which has been made in Hog's Back. They will climb up the earth thrown up by Crater A and move round the lip of the crater in two parties—odd numbers to the right and even numbers to the left. They will take up positions commanding the Chord to the right and left, and at once shoot down any Germans who may be offering any resistance to our parties on the right or left.

No man must be allowed to go down into the crater for at least 10 minutes after the explosion as it will probably be full of gas. 15 minutes should elapse if there is no wind.

7. Consolidation of Crater A. When all resistance has ceased the positions will be consolidated. A guide will be sent to the head of Savile Row to report to the officer in charge of working parties, and will guide Crater A carrying party up to the crater. This party will consist of 30 men carrying 15 steel loopholes and 15 shovels.

Every man will also carry 20 grenades in two sandbags, and 20 sandbags rolled on his back.

½ Section R.E. will come up with this party and assist in consolidating the position.

After leaving the crater these men will return to Northampton Trench via Hog's Back and Bart's Alley.

If the officer in Crater A wants any more men he may retain some of this party for work in the crater.

Communication trenches must be dug through the earth thrown up by the crater to:—

- (a) The Chord to the right of the crater.
- (b) To Crater No. 2 to be made by the Pioneers.
- (c) To Hog's Back to be made by the Pioneers.

A Lewis-gun emplacement will be made at a point from which it can enfilade C.1. and C.2, and also cover the front of the Chord to the right. Another emplacement will be made firing across the front of the Chord to the left.

All craters must either have a trench dug in lip of the crater or a broad fire step made running round the inside of the lip on the enemy's side of the crater. The lip of the crater must be prepared for defence with carefully concealed loopholes. The sandbags used must be covered with loose earth when the work is complete. Several loopholes must be constructed so as to command C.1 and C.2.

In order to give cover against Artillery fire, a splinter-proof parados must be made round the front of the bottom of the crater leaving a passage about a yard wide between the front wall of the crater and the parados. This may subsequently be roofed over.

¹ Sap 9 runs out from Savile Row to Crater No. 1.

Good pathways must be made leading from the bottom to the lip of the crater.

Fifteen foot ladders are available at the advanced R.E. dump.

8. Crater No. 2.

Crater No. 2 is at present strongly held on the far side by the enemy. It is hoped that they will be buried by the small mine which will be exploded in the side of this crater.

This crater will be occupied by a party of 16 men under an officer. They will be formed up in Savile Row and will follow immediately behind Crater A party when mines go up. On reaching Sap 9 (a)¹ they will turn up the sap to Crater No. 2.

This party will consist of 8 good shots and men formed into a grenade squad. Every man will carry a belt with 5 grenades. 4 men of the grenade squad will carry 20 grenades each.

Two pairs of wire cutters will be taken. The "good shots" of the party will occupy the far lip of the crater whence they can command the German saps on the other side.

The grenade squad will enter the right hand sap and bomb down it as far as its junction with Big Willie. They will not advance beyond this point until joined by the grenade party from the Chord.

9. Grenade Party.

The second grenade party will consist of 20 men organised for a bombing attack :—

2 Bayonet men.

2 Grenadiers.

2 Carriers.

Officer.

8 Men support.

2 Bayonet men.

2 Grenadiers.

2 Carriers.

} Side party to turn up the small sap to the right.

Every man except the leading bayonet men will carry 20 grenades. The leading bayonet men will carry 5 each.

This party will be formed up behind Crater No. 2 party in Savile Row and will follow close behind them as far as Sap 9 (a). They will not go up this sap but will keep straight on to the ramp in Hog's Back, and passing between Crater No. 2 and Crater A they will enter the German sap on the edge of No. 2 and proceed to bomb down to the Chord. Having cleared the short bit of trench to the left they will bomb down the Chord to the right and connect up with the grenade squad from Crater No. 2. They will then bomb a short distance down Big Willie and piquet it until the working party arrives to block it.

The officer commanding this party must take into consideration the possibility of the junction of C.1 and the Chord not being blocked by the earth from the crater. In this case he must piquet C.1.

When these trenches have been occupied a supporting party of 20 men will come up to help in the work of consolidation, each of these 20 men will carry 20 grenades, 20 sandbags, and a pick or a shovel—10 of them being told off to block Big Willie. The work of consolidation will be carried on on the same lines as that of the rest of the Chord.

¹ Sap 9 (a) runs out from junction of West Face and Savile Row to Crater No. 2.

Two grenade stores will be established in the Chord and the sap about 10 yards from their junction with Big Willie. A short siding will be made running south-west from this junction.

The party in Crater No. 2 will be reinforced by 15 men with 20 grenades, 20 sandbags, 1 shovel and a loophole plate each. The crater will be consolidated on the same lines as Crater A.

Communication trenches will be cut through to Sap 9 (a) and to the German sap.

10. Crater No. 1.

Crater No. 1 is at present strongly occupied by the enemy, who will not be affected by the explosion of the mine. It is hoped that the bombardment by our heavy mortars will have caused the garrison to retire temporarily.

This crater will be attacked and occupied by a party of 20 men under an officer who will be formed up in Savile Row behind the grenade party detailed to attack the German saps in the triangle.

They will move up immediately in rear of this party until Sap 9 is reached, up which they will turn. Should any enemy remain in this crater, they will be at once bombed out and the crater occupied.

Every man will carry 20 sandbags. The last 10 men will carry a shovel each. The first 10 men will carry 5 grenades each in bomb carriers. The remainder will carry 20 grenades each in sandbags.

It is thought that this crater has probably got an underground tunnel leading to the German trenches, in which case a few Threlfalite grenades will be thrown in. When the crater has been occupied it will at once be consolidated on the same lines as Crater A. Communication trenches will be at once made connecting it with Crater No. 2 and Sap 9.

11. Crater No. 3.

Crater No. 3 will be occupied and consolidated by a party of 10 men with a shovel and 20 sandbags each and 4 loophole plates between them. This party will be formed up in Bart's Alley behind the supports to the party attacking the Chord. As soon as the supports advance this party will at once move forward and consolidate Crater No. 3.

12. The Chord. Detail. 8/R.Fusiliers.

The assault on the Chord from the point midway between C.3 and C.4 and Crater B will be carried out by 50 men advancing with fixed bayonets from West Face. Ladders will be provided. Sap 10 will be bridged.

The party will be organised and the attack carried out in the same manner as the party attacking the other half of the Chord.

13. Support.

The support party will be formed up in Cork Street ready to take the place of the assaulting party as soon as the latter have advanced. They will act in a similar manner to the supporting party to the other half of the Chord. Great care must be taken in blocking C.4 as this communication trench is an important one. Wire must be put up across the block.

14. Crater No. 4.

Crater No. 4 will be occupied and consolidated by a party of 20 men formed up in Cork Street in rear of the supporting party.

The first 10 men will carry 5 grenades each and 20 sandbags rolled on the back, the last 10 men will carry 10 shovels and 20 grenades and 20 sandbags each.

No resistance at all is expected from this crater as the German post situated on this lip will be completely buried.

On occupying the crater the men will at once line the far lip and seek an opportunity to bring effective fire to bear on the enemy. The crater will be consolidated in the same manner as before. The iron loopholes already in position round this crater can be made use of.

A communication trench will be cut connecting the crater with Crater B and Saps 10 (b) and 11 will be cleared.

15. Crater B.

Crater B will be occupied by a party of 20 men under an officer formed up in Guildford Trench 40 yards from its junction with Sticky Trench. These men will not fix bayonets. Every man will carry 20 sandbags rolled on his back. The leading 10 men will carry 5 grenades each in belts—the remainder 20 grenades. 2 sniper-scopes will be taken with this party. The first 10 men to be picked shots.

Immediately after the explosion of the mine they will advance at the double to the ramp at the point of Sap 12 and then move round both sides of the lip of the crater and do their best to assist the troops attacking the Chord by taking up a position commanding the German trench. No men must be allowed down into the crater for at least 10 minutes after the explosion. When all resistance is at an end a message will be sent to a carrying party the head of which will be waiting at the ramp in Sap 12. This party will consist of 30 men under an officer carrying 15 steel loopholes and 15 shovels. Every man will also carry 20 grenades and 20 sandbags rolled on his back. $\frac{1}{2}$ Section of R.E. will come up with this party to help in the work of consolidation.

The crater will be consolidated in the same manner as Crater A. Communication trenches will be cut connecting the crater with Crater C, Crater No. 4 and the Chord, care being taken that the one in the Chord is not enfiladed. An emplacement for a Lewis gun will be made from which flanking fire can be brought to bear across the front of the Chord. The defences of Crater B will be extended to form a continuous line with the defences of Crater C.

The front of both these craters must be wired. This will be done by special wiring parties sent up later on.

16. Crater C.

The party occupying Crater C will be formed up in Guildford Trench in rear of Crater B party and will consist of 30 men under an officer.

Each man will carry 20 sandbags rolled on his back. The first 10 men will carry 5 grenades each in belts—the remainder will carry 20 grenades each. Four sniper-scopes will be carried with this party.

The first 10 men should be picked shots. The last 10 men will carry shovels.

This party will move immediately in rear of Crater B party to the ramp in Sap 12. They will occupy Crater C and take up a position commanding the Chord and Little Willie.

Consolidation of the crater will be at once proceeded with on the same lines as Crater A.

A Lewis gun emplacement will be made commanding Little Willie. Communication will be made and defences continued to Crater B. Wiring will be done by a special party which will come up when it gets dark. A carrying party of 80 men will be formed up in rear of Crater B carrying party. This party will carry 15 steel loopholes and 15 shovels. Every man will carry 20 grenades and also 20 sandbags rolled on his back.

1 Section R.E. will accompany this party. Both the carrying parties to Craters B and C will return to Northampton Trench via Sap 12, Crater Loop and Cork Street. They will not be kept in the craters unless required.

As soon as it gets dark a bombing party will be organised to bomb down Little Willie. Under cover of this party all traverses will be destroyed, the parapet pulled down and the trench filled in as much as possible.

The party will retire when the work has been finished covered by the fire of the Lewis gun in the crater and also the machine gun in Sticky Trench. The latter gun must be warned not to fire while the work is going on.

17. Communications.

The following trenches will be used for "Up" traffic only:—Savile Row—Kaiserin Trench—Guildford Trench and northern half of Sap 12. Bart's Alley and Cork Street will be reserved for "Down" traffic.

All stretchers will come down Bart's Alley. Only men carrying urgent messages will be allowed to come down the "Up" traffic trench. One officer will be stationed at the head of Bart's Alley and Cork Street to control down traffic. No unauthorised person will be allowed to pass. The following communication trenches will be dug by the infantry and pioneers:—

No. 1. Russian Sap from Kaiserin Trench to Crater No. 1 will be opened out and continued by 2 platoons pioneers.

No. 2. A party of 10 men will help in the construction of a communication trench between Craters No. 1 and No. 2.

No. 3. Sap 9 will be opened up and continued to Crater No. 1 by a party of 10 men.

No. 4. Trench connecting Crater A with No. 2—15 men.

No. 5. Trench connecting Crater A with Hog's Back—15 men.

No. 6. The old communication trench between Crater No. 3 and the Chord to be opened up by 1 platoon pioneers assisted by 50 men of 9/R. Fusiliers.

No. 7. Sap 12 to Craters B and C—20 men.

No. 8. Russian Sap from Sticky Trench to Crater C to be opened up and continued by 1 platoon pioneers and 20 men 8/R. Fusiliers.

18. Notice Boards.

Officer commanding R.E. will arrange to have notice boards ready to place at the entrance of each communication trench showing to which section of the defence it leads: *e.g.*—

B	To a Crater	I	-----
I		I	“ To the Chord ”

19. Grenades.

The following grenade stores have been established. A N.C.O. and one man will be in charge of each :—

1. Junction of Savile Row and Kaiserin Trench	4,000.
2. Junction of West Face and Kaiserin Trench	1,000.
3. Head of Bart's Alley	3,000.
4. " " Cork Street	3,000.
5. Junction of Guildford Street, Sticky Trench	1,000.
6. " " " " and Northampton Trench	3,000.

The number of grenades in Stores No. 2 and No. 5 must be kept up under regimental arrangements. Stores No. 1, 3, 4 and 6 will be kept up under brigade arrangements.

The officer commanding each detachment is responsible that he has an ample supply of grenades in his section of the defence, and will send a guide to the nearest grenade store whenever he requires grenades, stating number he requires. Carrying parties will be held in readiness for the immediate despatch of grenades, at the following points :—

1. South end of West Face	25 men (9/R.Fus.)
2. Between Bart's Alley & Cork St.	30 " (15 9/R.Fus.) (15 8/R.Fus.)
3. South end of Sticky Trench	25 " (8/R.Fus.)

Each of these carriers will have in readiness 40 grenades packed in sandbags ready to sling on his shoulder and advance immediately they are required. Every officer must most carefully control the expenditure of grenades during the night. No unnecessary throwing must ever be allowed.

N.B. There is sometimes a tendency to continually throw grenades into a communication trench even when there is no reason to suppose that the enemy are in the immediate neighbourhood. This is a great waste of grenades and also shows the enemy our exact position.

The following permanent stores of grenades exist and can be drawn on if required :—

	Grenades.
Right Battalion Reserve in Gordon Alley ¹	2,000.
Left " " Quarry ¹	2,500.
Advanced " Brigade Store (Junct. Gordon Alley and Reserve T.) ¹	3,000.
Advanced Brigade Store (Cannon Street) ¹	3,400.

20. Very Lights.

A Very Pistol must be carried by each party of the attacking force, as well as 50 cartridges. A further supply of Very Lights can be obtained from any of the grenade stores. These lights must only be used during an attack or if it is believed that the enemy are advancing, otherwise our work of consolidation will be seriously hindered.

21. R.E. Stores.

Advanced dumps have been formed at the following points :—

1. Junction of Savile Row and Support Line.
2. " " Left Boyau and Northampton Trench.

Any officer requiring more stores will send a guide to one of these dumps.

¹ Not shown on Sketch 8.

22. Reserve Men for Working and Carrying Parties.

Extra working parties will be held in readiness in the neighbourhood of these dumps which can be called upon to help in the work of consolidation if required.

50 men 9/R.Fusiliers near No. 1 Dump.

50 „ 8/R.Fusiliers „ No. 2 Dump.

Any pioneers not previously detailed will also remain near these dumps. These working parties will also be employed as carrying parties for R.E. Stores. An officer must be in charge at each dump to regulate the supply of men. Should more men be required officers commanding battalions will arrange beforehand from which trenches they are to be drawn.

23. Garrisons of Posts.

When the consolidation of any section of the defence is complete, the officer commanding that section will decide how many men he considers necessary to hold it. The remainder of the men will be sent back with a written order stating the number of men in the party and will report to the officer controlling traffic at the head of Bart's Alley or Cork Street, who will send them back to the dug-outs which have been allotted to their respective companies.

24. Lewis Guns.

Lewis guns will be placed in the following positions :—

The Right Section (9/R.Fusiliers).

- (1) Crater A bringing enfilade fire across the front of the Chord.
- (2) Crater A enfilading C.1 and C.2 and (alternative) bring enfilade fire across the front of the Chord to the left.
- (3) In the Chord 20 yards south of C.3 covering the front of Crater A.

Left Section (8/R.Fusiliers).

- (1) Crater B covering front of the Chord.
- (2) Crater C enfilading Little Willie.

These guns will be brought up as soon as the troops are firmly established in the positions. Lewis gun officers should go on in front as soon as possible to select positions.

Should these officers consider that additional guns could be used to advantage, they will report at once to their commanding officers.

25. Ammunition Supply.

Boxes of S.A.A. will be kept at intervals on the fire steps along Kaiserin Trench south of Savile Row and Sticky Trench, 30 boxes in each trench. All officers requiring S.A.A. will send back men to these trenches to bring it up.

In case of emergency they may send a written order back for the S.A.A. to be sent up to them by the men in these trenches.

Every officer will establish a small store of S.A.A. in his section of the defence.

26. Trench Mortars.

The officer commanding the trench mortars will arrange the following :—

The 2-inch Mortars (2 guns of No. 10 T.M. Battery) will register on Big Willie and the German crater 100 yards east of Crater No. 1. From 5.10 P.M. to 5.40 P.M. they will fire on Crater No. 1.

At 5.45 P.M. immediately the mines are exploded they will fire 2 smoke bombs (1 from each gun) to form a smoke barrage between Big Willie and Craters Nos. 1 and 2. It is essential that these bombs should be fired while the débris from the mine is still in the air.

After the mines have been exploded and during the night both guns will fire on Big Willie and the German crater 100 yards east of Crater No. 1.

The 1½-inch Mortars (No. 1 T.M. Battery) will fire on the following points from 5.10 P.M. to 5.40 P.M. :—

2 guns on the German trenches between Crater No. 1 and the Chord.

2 guns on Crater No. 1.

After the explosion and during the night (when called upon) they will fire on the following points :—

1 gun on Big Willie near the German crater.

1 gun on C.1.

1 gun on C.2.

1 gun on C.4.

Observation for the fire on C.1, C.2, and C.4 must be arranged for, from some point on Crater A.

The 3·7 Mortars (A/86 Light Mortar Battery) will fire on the Chord between the probable position of Craters A and B from 5.30 P.M. to 5.43 P.M. with the intention of causing the enemy to retire into dug-outs where it is hoped they will be buried by the concussion of the mines.

Will fire 3 smoke bombs in front of the Chord between Craters A and B immediately the mines go up and before the débris descends.

After the explosion and during the night when called for they will fire the following :—

2 guns on C.4.

2 guns on Little Willie.

27. Reinforcements.

Officers commanding 8/ and 9/Royal Fusiliers will arrange to have at least 80 men in Sticky Trench and Kaiserin Trench (south of Savile Row) who will be held in readiness for the immediate despatch of reinforcements if necessary. Should these men be used they must be replaced immediately by men from Northampton Trench and Vigo Street respectively, who will move up via Quarry Alley¹ or Poker Street.¹

28. Machine Guns.

Machine guns will be situated in the following positions with an officer in charge of each :—

- (1) Kaiserin Trench (in the emplacement already made for it) firing towards Big Willie. The exact position occupied by our grenadiers in Big Willie must be carefully observed and a stop put to prevent the gun firing to the left of this point at night.
- (2) Sticky Trench (in emplacement already made for it) firing towards Little Willie.

¹ Not shown on Sketch.

29. Artillery.¹

I Corps Artillery.

2-9-2-inch Howitzers.	Objective—	Tirpitz Trench.
2-8- " "	"	Hindenburg Trench.
2-8- " "	"	Junction of Tirpitz and Parsifal trenches.
2-60-pdr. guns.	"	Behind the Fosse.
2-60-pdr. "	"	Parsifal Alley.

Guns and howitzers will be laid on these objectives and can be called for through the left group commander, 12th Division R.A., or headquarters 12th Division by G.O.C., 36th Infantry Brigade.

12th Division Artillery.

59th Siege.	6-inch.	objective.	Mad Point and fire trench from there up to A.28.d.3.0.
81st Siege.	6-inch.	"	Trench G.5.a.1.0. to G.5.a.2.1.
4-Howitzers.	4.5-inch	"	Zeppelin Alley.
4- " "	"	"	Dump Trench.
8-18-pdr.	"	"	{ Enfilade Cross Trench from G.5.a.0.3. to G.5.a.2.1.
8-18-pdr.	"	"	South Face, Big Willie.
6-18-pdr.	"	"	{ Fire Trench G.4.b.3.9½. to Junc- tion of Cross Trench G.4.b.4½. 3½.
4-18-pdr.	"	"	Enfilade Corons Alley.
8-18-pdr.	"	"	{ Reserved for machine gun em- placements as required by G.O.C. 36th Infantry Brigade.

Reserve. 10-18-pdr.

The divisional artillery will open a barrage on the mines exploding as indicated above, for 20 minutes. After this 20 minutes barrage the guns will fire irregularly bursts of fire during the night, and give covering fire as required.

The left group commander—Lieut.-Colonel Short, R.A., will be with the G.O.C. 36th Infantry Brigade at his headquarters and will co-operate as desired.

A R.A. officer will also be in the front trench to ensure co-operation with the attack and will be in telephonic communication with the left group commander.

30. Special Wiring Parties.

As soon as it gets dark special wiring parties will be sent up to help in the consolidation of the position.

No. 1 Party from No. 1 Dump to wire the front of Crater A. (This party to consist of 20 men who have been specially instructed.) They will carry with them collapsible knife rests and these will be put together in the bottom of the crater and placed in position well in front if possible. If enemy's fire is too hot to allow men to go out in front these knife rests will be placed on top of the lip and rolled down outside. Wiring must go on the whole night without intermission.

The south-eastern side of the crater should also be wired.

No. 2 party consisting of 30 men from No. 2 Dump to go to

¹ Most of the artillery objectives naturally do not appear on the Sketch. The co-ordinates refer to the squared map in use at the time.

Craters B and C carrying materials with them. The wiring of these craters will be carried out in the same manner—the wire being continuous round both craters, round the northern side of Crater C and continued round to the Chord.

Reliefs must be arranged for these parties by officers commanding units.

31. Mines.

O.C. 170th Tunnelling Company R.E., will arrange for an officer and whatever number of men he may think necessary to inspect at once, and take charge of any of the enemy's mining shafts which may be found in the Chord.

32. Craters.

All men must be warned of the danger of gas in the craters which have just been exploded. No man should be allowed to go down to the bottom of a crater for at least 10 minutes. If there is no wind they should not go down until 15 minutes after the explosion.

If any difficulty is experienced in getting in and out of these craters, 15 ft. ladders can be obtained from the R.E. dump. These ladders must only be looked on as a temporary measure—pathways must be cut immediately.

33. Casualties.

Casualties will be evacuated by Bart's Alley. The position of First Aid Posts will be notified later.

34. Prisoners.

Prisoners will be sent to the Quarry by the most convenient "Down" trench.

35. Dug-outs.

No man will be allowed in any dug-out from 5.30 P.M. till after the explosion of the mines.

36. Reliefs etc.

Officers commanding units will be responsible for the provision of reinforcements and for the relief of any of their detachments when they consider it advisable. O.C. units will each detail an officer to remain at the R.E. dump to control the supply of men required for extra working parties.

37. Soup.

Officers commanding units will arrange for soup to be drawn from the Soup Kitchen at Vermelles and sent to the men in the front line.

38. Reports.

The report centre of the 36th Infantry Brigade will be at the Quarry. The position of battalion report centres will be notified later.

As soon as possible after the attack reports will be required from officers in command of attacking parties on the following points :—

- (1) Whether their objective has been gained.
- (2) Number of casualties.
- (3) Number of prisoners.
- (4) Number of enemy dead.
- (5) On communication to their section.
- (6) Information re conduct of enemy.
- (7) " " re sections on their flanks.
- (8) Any enemy mine shaft discovered.

APPENDIX I.

ATTACKING PARTIES FROM 9/ROYAL FUSILIERS.

Men.	Forming up place.	Objective.	Grenades.	Sandbags.	Wire Cutters.	Tools. Picks. Shovels.	Loop-holes.	Sniper-scoops.
(a) 50	West Face	Chord (centre to Crater A)	330	—	25 (7 breakers)	—	—	—
(b) 35	Bart's Alley	ditto	700	700	—	20	15	—
(c) 30	Kaiserin Trench	Crater A	350	600	—	—	10	4
(d) 16	Savile Row (head of)	Crater No. 2	160	—	2	—	—	—
(e) 20	Savile Row (behind the party of 16 (d))	German saps between Crater No. 2 and the Chord	—	—	3	—	—	—
(f) 20	Savile Row (behind (e))	Crater No. 1	370	—	—	—	—	—
(g) 20	Savile Row (behind (f))	Support to (e) party	250	400	—	10	—	—
(h) 30	Savile Row (behind (g))	Crater A carrying party	400	400	—	10	10	—
(i) 15	Savile Row (behind (h))	Support for Crater No. 2	600	600	—	15	15	—
(j) 10	Bart's Alley	Crater No. 3	300	300	—	—	15	—
			—	200	—	—	10	4

APPENDIX II.

ATTACKING PARTIES FROM 8/ROYAL FUSILIERS.

Men.	Forming up place.	Objective.	Grenades.	Sandbags.	Wire Cutters.	Tools. Picks. Shovels.	Loop-holes.	Sniper-scoops.	Remarks.
(a) 50	West Face	Chord	330	—	25 (& 7 breakers)	20	15	—	
(b) 35	Cork Street	Chord	700	700	—	—	—	4	
(c) 20	Cork Street in rear of (b)	Crater No. 4	250	400	—	—	10	—	
(d) 20	Guildford Trench forty yards from top	Crater B	250	400	—	—	—	2	
(e) 30	Guildford Trench in rear of (d)	Crater C	450	600	—	—	10	—	4
(f) 80	Guildford Trench in rear of (e)	Crater B (carrying party)	600	600	—	—	15	15	2 half sections R.E. will go with these parties. The parties will move up to head of Sap 12 when parties have cleared the way.
(g) 80	Guildford Trench in rear of (f)	Crater C (carrying party)	600	600	—	—	15	15	

These reports must be despatched with all information available. Subsequent reports will give fuller information.

Reports will be required at frequent intervals stating the progress made in consolidation and communications to the rear.

Any unusual occurrence must be reported immediately.

Issued at 8 A.M.

D. F. ANDERSON,
Captain,
Brigade-Major,
36th Infantry Brigade.

APPENDIX III.

WORK TO BE DONE BEFOREHAND.

Hog's Back, West Face, upper ends of Cork Street and Bart's Alley to be cleared and made easily passable for men moving at the double.

All saps and the trench between 6:15 Crater and the German crater to the north of it, to be cleared.

Sap 12 to have a ramp made at the Angle (Point R) so as to enable men to run straight up from the trench and over the parapet.

Hog's Back and Sap 10 to be bridged. Ladders to be placed in West Face at intervals of one yard between points W and X and Y and Z.¹

Bomb stores to be made at :—

	Grenades.
Junction of Savile Row and Kaiserin Tr. to hold . . .	4,000
ditto West Face and ditto . . .	1,000
Head of Bart's Alley	3,000
Head of Cork Street	3,000
Junction of Guildford Tr. and Sticky Tr.	1,000
ditto Northampton Tr.	3,000
TOTAL	15,000

M.G. emplacements made to protect the flanks.

One south of the junction of Quarry² and Sticky Trenches.

One south of the junction of Savile Row and Kaiserin Trench.

Russian saps to be made from Kaiserin Trench towards Crater No. 1, and also from Sticky Trench towards Crater C.

¹ i.e. the whole attack frontage of the two battalions.

² Not shown on Sketch 8.

THE SOMME

PLAN FOR OFFENSIVE BY THE FOURTH ARMY. G.X.3/1.

SUBMITTED TO G.H.Q. 3RD APRIL 1916

Map 1.
Sketch A.
General
remarks
on
Fourth
Army
front.

Tactical
features
that af-
fect our
plans.

1. The front now held by the Fourth Army from the River Somme to Fonquevillers is shown on the attached map.

2. It will be seen that just North of the Somme this line forms a very marked salient round the village of Maricourt, and that to the North the village of Gommecourt forms a re-entrant in our line.

Along the rest of our line there are no very marked salients or re-entrants.

3. The valley of the Ancre is a topographical feature of considerable importance, dividing up our line, as it does, by an obstacle over which communications are somewhat difficult.

4. The high ground about Pozzières is most important, as it gives the enemy a marked advantage in command and observation and covers from view a considerable part of his second line of defence.

5. The terrain throughout this area is very undulating, with the result that observation of the enemy's front system and defended localities is good almost all along the line. This, however, does not apply to many portions of the enemy's second line.

6. The valleys behind our lines furnish good artillery positions for a large number of guns, many of which can be brought up comparatively close to our front line.

These valleys, and also the Thiepval, Aveluy, Authuille and Becourt Woods, afford good assembly places for reserves.

Map 2.
Hostile
defences.

7. The German defences consist of a front system and a second line. The latter is at a distance varying from 2,000 to 5,000 yards behind the front system. Parts of it, though not actually out of range of our guns, will be difficult to deal with, as they are only observable from the air.

8. There are a considerable number of strongly fortified villages both in the front system and between it and the second line of the German defences.

Of these Mametz, Fricourt, La Boisselle, Ovillers, Thiepval,

St. Pierre Divion, Beaumont and Gommecourt form part of the front system.

Contalmaison, Pozières and Serre are defended localities between the front system and the second line.

All the above are well within range of our heavy guns and howitzers, and most of those in the front system are within range of the heavy trench mortars.

9. Both the front system and the second line are well wired. Most of the wire along the front system can be observed from our observation posts, but the greater part of the wire in front of the second line can only be observed from the air. The ground lends itself to the construction of well concealed flanking defences, and dug-outs of any depth can be constructed.

10. The undulating nature of this country must often force the enemy to place his 77mm. batteries in forward positions to avoid dead ground, unless he makes up his mind to rely entirely on machine-gun defence in certain localities.

11. Within the enemy's lines are certain points which will be of great tactical importance as observation posts in dealing with those parts of the second line which are not now visible.

Of these the principal ones are :—

- (a) The ridge running north from Fricourt to Pozières, past Fricourt Map 1A. Farm and Round Wood.
- (b) X.9 central.
- (c) Spur in R.33.c.
- (d) High ground just East of Thiepval, R.26.c. and d.
- (e) Spur North of Thiepval, R.20.c.
- (f) Ridge North-west of Beaucourt, Q.6.d.
- (g) Serre and L.25.a.

12. In deciding on the width of front and depth to be attacked by Selection the Fourth Army the following factors have been taken into consideration :—

- (a) The number of troops available.
- (b) The number of heavy guns and howitzers available.
- (c) The number of reserves it is necessary to keep in hand. This, of course, depends not only on the front to be attacked but on the distance of the furthest objectives selected for the attack.
- (d) The front which will give us the most suitable flanks.
- (e) The extent and depth of the enemy's defences.

13. 17 Divisions will, I understand, be available for the offensive, Number of troops excluding the divisions to be retained in G.H.Q. Reserve.

I consider that for an attack of this nature, which may have available. to continue for a fortnight or more, 8-9 men a yard is none too much.

I have therefore endeavoured to select a suitable front of about 20,000 yards with a depth of 2,000 to 5,000.

14. It is understood that 200 heavy howitzers (6", 8", 9.2") will be Number of heavy available.

This number will not suffice to deal effectively with a larger guns front than 20,000 yards or a depth greater than 4,000 to 5,000 available. yards.

Allotment of divisions to Corps and Army Reserve.

15. It is proposed to place four Corps in front line and one Corps in Army Reserve, and distribute divisions between the four Corps in front line as follows, from right to left :—

XIII Corps	..	..	..	5.
III	..	..	..	3.
X	..	..	..	3.
VIII	..	..	..	4.

leaving 2 divisions for the Corps in Army Reserve, with one cavalry division.

16. The allotment of Divisions to Corps is to a certain extent governed by the lie of the ground which divides the attack into four fronts with definite objectives, each of which is suitable to the attack of a corps of 3 divisions. In addition the two flank corps each require one division on the defensive to hold the line, the XIII Corps in the Maricourt salient, the X Corps opposite the Gommecourt re-entrant.

The XIII Corps has been allotted a fifth division as a corps reserve on account of the importance of the Maricourt salient and our point of junction with the French on the Somme river.

The fifth corps of two divisions, with 1 cavalry division, I propose to hold as Army reserve, either to reinforce any of the four corps in the front line should occasion arise, or to use a corps for further operations should we succeed in reaching our objectives.

Defensive flanks.

17. On the South there is no doubt that the Maricourt salient itself affords a good defensive flank for the attack in its initial stages, and should therefore be made use of for this purpose.

The attack on Mametz and Fricourt will require further protection and the defensive flank must be extended from the salient, to secure a hold on the spur running west from Montauban, so as to prevent the enemy enfilading the attack from this direction.

The Southern defensive flank therefore can be very suitably placed from A.8 central to X.29.d.

18. On the North two alternatives suggest themselves.

- (i) To include the Gommecourt salient and the high ground between that place and Puisieux.
- (ii) To include as far North as Serre and L.25 central.

Both would form suitable flanks but (i) involves a front of attack of some 26,000 yards, which is more than the force available can deal with satisfactorily.

(ii) would give a front of 20,000 yards and will give a very strong defensive flank in every way. It will at the same time allow me to retain sufficient troops in hand to relieve those divisions which may suffer heavily and thus enable me to maintain a sustained offensive.

I propose therefore to make (ii) my defensive flank to the North.

Extent and depth of enemy's defences.

19. As already pointed out the enemy's defences consist of

- (i) Front line system.
- (ii) Defended localities between the front system and the second line.
- (iii) Second line.

As regards (i) most of the wire in front system can be dealt with by field guns and trench mortars and should afford no serious difficulty as regards wire-cutting.

There should also be enough howitzers and heavy trench mortars available to destroy a large portion of the defences themselves.

The same applies to the defended localities which can be pulverised with heavy howitzers.

20. When, however, we come to the second line, considerable difficulty arises.

South of the Albert—Bapaume Road near Pozières this line is Map 2. over 4,000 yards from our front line trenches, and being on the reverse slope is almost entirely unobserved from our line. It will be difficult to deal with this part of the second line, and especially with the wire, until we have advanced a considerable distance beyond our present line.

21. I do not therefore propose to include the second line South of Pozières in the objectives allotted to Corps.

North of the Albert—Bapaume Road there will also be some difficulty in observing the second line, but it is within 4,000 yards of our front line, sometimes much less, and I consider its capture, therefore, a feasible operation and one which should be included in the objectives given to Corps.

22. I place great importance on the capture of Pozières and Contalmaison as starting off places for any further advance that may be undertaken against the enemy's position in front of the Maricourt salient.

23. The line of objectives I propose should be reached is shown in green on the attached map.¹

24. Broadly speaking there seem to be two alternatives both as regards the form the attack is to take and also as regards the employment of the artillery.

(i) GENERAL PLAN.

(a) An attack to rush the whole of the enemy's defences in one rush as was attempted at Loos.

(b) An advance in two stages, the first to include the enemy's front line system of defences and certain important tactical points (alluded to in para. 11 above) which are essential to the success of a further advance and which are indicated by the blue line.¹

The second, to be undertaken as soon as preparations can be made. These objectives are indicated on the map by the green line.¹

(ii) ARTILLERY BOMBARDMENT.

(a) An intense bombardment of some 5-6 hours duration with every available gun and howitzer immediately prior to the assault.

(b) A longer, more methodical, but less intense bombardment of 48-72 hours duration.

25. In weighing the advantages and disadvantages of 1 (a) and 1 (b) the following are the deciding factors:—

(a) Strength and depth of the enemy's front line defences.

(b) Number and strength of the defended localities in rear of the front system.

(c) Visibility and strength of the enemy's second line.

¹ See Sketch 2 where the "1st Phase" and "Objective 6th June" practically coincide with "blue" and "green" respectively.

Objectives selected for the operations.

Choice of method of carrying out the attack.

General principles which must guide us in selecting best form of attack.

- (d) Distance of the enemy's second line behind his front system.
- (e) The strength and position of the enemy's supports and reserves.

26. If the enemy's supports and reserves are in sufficient numbers and near enough to man the rear defences before our leading lines reach them the chances are against our first rush getting through, especially if the wire in front of this line cannot be destroyed.

On the other hand, there may be, as has happened in the past, a panic and loss of moral, due to surprise and the severity of the bombardment, which it is of the highest importance to take immediate advantage of. If it is not taken immediate advantage of, and our advance stops short of the furthest objectives, the enemy will probably soon recover from his panic and surprise, and what would have been an easy task at the first onset will soon become a difficult one, involving further careful preparation, considerable delay, and greater ultimate losses.

It is the first rush, always provided that it is well backed up, that gains all the ground. Moreover, much can be done by well organised and well directed fire to prevent the enemy's supports and reserves, as they leave their billets or dug-outs, from reaching their alarm posts.

27. In considering this question, we must be very careful not to allow the bogey of large imaginary German reserves of men and guns to frighten us off a course of action which either inadequate resources in men and guns, or insufficient time allowed for preparation, has hitherto prevented us from undertaking with a reasonable chance of success.

28. On the other hand there is no doubt that there are serious disadvantages to 1 (a).

- (i) The troops are bound to become disorganised in a rush of this sort over 3,000 to 4,000 yards of broken ground, in which case even a few maxims may hold them up.
- (ii) Unless very well disciplined indeed, it is hard to reorganise them to meet a counter-attack. This is important, as it must be remembered that neither our new formations nor the old divisions have the same discipline that obtained in our Army of a year ago.
- (iii) If the second line or a defended locality in that neighbourhood is found to be held, and the first rush against it is repulsed, it is very much more difficult to reorganise the troops for a further advance later.
- (iv) It is most difficult for the infantry units to maintain the correct direction in an advance of from 3,000 to 4,000 yards, especially in an undulating country where their objective is frequently hidden from view.
- (v) The task of the artillery is much more difficult. It is hard to follow and support such a long infantry advance, there are many more objectives to deal with, and it is difficult, if not impossible under these conditions, to assist the infantry with artillery fire against counter-attacks in its more distant positions. This latter disadvantage is perhaps the most important of all.

These principles applied to the concrete case before us.

29. After careful consideration of these general principles I have come to the following conclusions as regards the problems before us. The attached map ¹ gives a good idea of the strength and depth

¹ Not reproduced. See Maps and Sketches of 1st July 1916.

of the enemy's defences, the number and strength of defended localities, the visibility and strength of the enemy's second line, and the distance of the enemy's second line behind the front system. The tracing¹ gives the disposition of the enemy's available supports and reserves in front of the Fourth Army as far as they are at present known.

A consideration of these shows that the second line is a very strong one, consisting of front and support trenches well wired throughout as are also the defended localities, and that a great deal of this second line is well concealed and at a considerable distance behind the front system.

There is also every probability, judging by the positions of the reserve billets, that the enemy will be able to man his rear defences before our first lines in the attack can reach them.

30. To sum up, an attempt to rush the whole of the enemy's defences in one rush will, under the conditions that obtain, involve very serious risks and will be in the nature of a gamble.

Speaking with only a limited knowledge of the general situation it is open to question whether the gamble is worth the risks involved.

It does not appear to me that the gain of 2 or 3 more kilometres of ground is of much consequence, or that the existing situation is so urgent as to demand that we should incur very heavy losses in order to draw a large number of German reserves against this portion of our front. Our object rather seems to be to kill as many Germans as possible with the least loss to ourselves, and the best way to do this appears to me to be to seize points of tactical importance which will provide us with good observation and which we may feel quite certain the Germans will counter-attack. These points to be, not only ones of special tactical importance with a view to a further advance, but to be such that the Germans will be compelled to counter-attack them under disadvantages likely to conduce to heavy losses, which we can only ensure if these tactical points are not too far distant from our gun positions.

I therefore propose to adopt alternative 1 (b) and to divide the operations into two phases.

31. The first phase is shown in blue on the map, the second phase in green.²

The time to elapse between the first and second phases cannot at present be definitely decided, but arrangements will be made to commence the second phase immediately the first objectives have been secured. Moreover, forward gun positions from which to deal with the objectives of the second phase will be prepared and the organization for the second attack will be well thought out and arranged beforehand.

It is most important that there should be as little delay as possible between the two phases so that the enemy may not have time to reorganise his defence or bring up more men and guns from a distance.

32. As regards the artillery preparation, alternatives 2 (a) and 2 (b). There is a good deal to be said for and against either of these alternatives.

¹ Not reproduced. See Maps and Sketches of 1st July 1916.

² See Sketch 2 where the "1st Phase" and "Objective 6th June" practically coincide with "blue" and "green" respectively.

An intense bombardment may cause more moral effect on account of its intensity and the attack will come more as a surprise at the conclusion of the bombardment. There will, in consequence, be no time for the enemy to bring up guns and reserves to meet the attack.

On the other hand the moral effect of a prolonged bombardment with an effective back barrage to prevent food and ammunition being brought forward to the front line is no doubt very great indeed, as was proved both at Loos and in Champagne.

It must also be remembered that the Germans did not reinforce at Loos even though there was a four days' bombardment.

Difficulties will also arise in the case of an intense bombardment in the assembly of the assaulting infantry.

The intense bombardment must take place by daylight, therefore the whole of the assaulting troops would have to be at or near their assembly trenches during the whole time and would undoubtedly suffer casualties and lose morale. This would be avoided in a more prolonged bombardment as the attack could then take place in the early morning and the attacking troops got into position under cover of darkness.

On the whole I consider that alternative (b) will fit in best with the general plan selected, and I would therefore propose to have 50-60 hours bombardment previous to the assault. In any case it will probably be necessary to commence the wire-cutting previous to the bombardment, and in order that this may not prematurely disclose the front to be attacked it would be advisable for other Armies to cut wire at the same time.

Use of
Gas.

33. As regards gas, generally speaking, now that the enemy is provided with efficient masks, it appears to me that the disadvantages of using gas outweigh the advantages on account of its dependence on a suitable wind, its danger to our own troops, and the handicap to our men of wearing masks when assaulting.

The last two objections, however, do not apply to the use of gas on fronts not to be assaulted, when the wind is favourable. I propose, therefore, to employ gas to the fullest extent on the two defensive fronts at Maricourt and Hébuterne and to employ just sufficient gas mixed with smoke along the fronts to be attacked, to compel the enemy to put on his masks and thus place him at a disadvantage to our men who will not be wearing masks.

Use of
smoke.

34. I propose to employ smoke to the fullest extent possible all along both defensive fronts and the fronts to be attacked. This will take the form of candles, hand smoke bombs, and 4" Stokes Mortar bombs if the wind is favourable, and 4" Stokes Mortar bombs only if the wind should be unfavourable.

35. To render surprise effective it will be most necessary that the Armies to the North in addition to cutting wire along their fronts, should also dig dummy assembly trenches, push forward saps, and burn smoke candles so as to deceive the enemy till the last moment as to the front to be attacked.

Summary of
proposals.

36. To sum up, the attack will be made by four Corps with ten divisions, two divisions remaining on the defensive, three divisions in Corps reserve, and two divisions and 1 Cavalry division in Army reserve.

The attack to be made in two phases, the second following on

the first as soon as preparations are completed, probably in three days. The first phase to be preceded by a bombardment of 48-60 hours duration by all available guns, howitzers and trench mortars.

Gas to be used only on the defensive fronts, except in small quantities.

Smoke to be used all along the front.

THE SOMME
G.H.Q. LETTERS (O.A.D. 710 AND 710/1)
TO
GENERAL SIR H. RAWLINSON,
12TH APRIL 1916

WITH REFERENCE TO THE FOURTH ARMY PLAN

O.A.D. 710.

Map 1. Your plans and preparations for an offensive on the Fourth
Sketch A. Army front should be based on the following general instructions :—

(i) The attack is to form part of a general offensive to be made in close co-operation by the British and French forces on the Western Front. Simultaneous operations will be undertaken by the Russians and Italians on their respective fronts.

(ii) The inner flanks of the French and British attacking forces will join, at the outset, about Maricourt. From the point of junction the front of your attack will extend to about Hèbuterne; that of the French forces to the Oise.

(iii) Your principal effort in the first instance will be directed to establishing a strong defensive flank on the spur from Serre (inclusive) to Miraumont and to capturing and securing the high ground about Pozières and the spurs running thence towards Beaucourt sur Ancre and Grandcourt and towards Fricourt.

A simultaneous attack should be made on the enemy's trenches from Fricourt eastwards to the point of junction with the French. In this area Montauban and the ridge running thence to Mametz, as well as the Briqueterie south-east of Montauban are very important features which should be captured and secured as early in the operations as you find possible with the means at your disposal. Their possession will be of considerable tactical value to us in the second stage of the operations (vide next paragraph).

(iv) After gaining the ground described above, your next efforts must be directed to capturing, by attacks from the west and south,

the Ginchy—Bazentin le Grand ridge and then pushing eastward along the high ground towards Combles in order to co-operate with and assist the French Army on your right in effecting the passage of the river Somme.

As your advance progresses eastwards it will be essential to establish and maintain a strong line of defence on your left (outer) flank, joining up with the line which you will previously have established above Pozières.

(v) Throughout these operations the closest touch and co-operation must be maintained with the French forces on your right. The line on which your right flank is to join with their left flank in the first instance, and the manner in which co-operation is to be ensured during the subsequent advance, are points to be discussed between you and the commander of the French Group of Armies of the North. Separate instructions have been issued to you on this subject.

(vi) Operations subsequent to those outlined above must depend on the degree of success gained and on developments which cannot be foreseen. But the object will continue to be to prevent the enemy from re-establishing his line of defence and to exploit to the full all opportunities opened up for defeating his forces within reach, always, however, with due regard to the need to assist the French Army to effect the passage of the river Somme.

O.A.D. 710/1.

With reference to the 'Plan for Offensive by the Fourth Army' forwarded under cover of your No. G.X.3/1, dated 3.4.16, I am directed to make the following remarks.

(2) General instructions for your guidance as to the objectives and scope of the attack are forwarded herewith, in continuation of my O.A.D. 710, dated the 12th April 1916.

These instructions will enable you to consider how far the initial stages of the attack, as proposed in your 'Plan' may require modification in view of the further objectives to be attained.

(3) One of the most important problems raised by you is the question of the objectives to be attained in the first instance, a point discussed in paragraphs 21-24 of your paper.

It is, of course, inadvisable to push on isolated and disorganized bodies of troops beyond the reach of possible support, in face of an enemy who is still capable of delivering organized counter-attacks on a scale which these troops, unsupported, could not be expected to be capable of beating off.

On the other hand, the importance of using every endeavour to surprise the enemy at the outset and to take full advantage of the confusion and disorganization in his forces resulting from our first assault can scarcely be over-rated.

Experience shows that tactical advantages may be secured with comparative ease during the first few hours of an attack which, if not secured then, are very costly and difficult to capture later. The further a first success can be pushed the greater will be the enemy's demoralization and confusion, the better prospects there will be of capturing his guns, and the easier will be our subsequent advance. It is therefore usually wiser to act boldly in order to secure, at the outset, points of tactical value which it may be possible to reach,

rather than to determine beforehand to stop short of what may prove to be possible in order to avoid risks.

The risks to be incurred can be foreseen and to a great extent guarded against by careful previous arrangement for providing artillery support, for throwing in reinforcements as required to fill gaps in the line and to cover flanks that become exposed, for ensuring an adequate supply of munitions, food and water, and, generally, for providing the means of holding what may be gained.

The first advance, therefore, should be pushed as far as the furthest objectives of tactical value which we can reasonably hope by forethought and tactical skill to be able to retain after capturing.

Applying this principle to the operations in question, the Commander-in-Chief desires that further consideration may be given to the possibility of pushing our first advance further than is contemplated in your plan, especially on your left on the spur between Serre and Miraumont and on your right towards Montauban and the Briqueterie.

The Serre—Miraumont spur offers a strong defensive flank and its possession will be of great assistance to your attack, on the left bank of the Ancre, against the high ground between Pozières and Grandcourt, where it is important to gain as much ground as possible on the first day in order to facilitate the later operations.

Simultaneous activity against the Gommecourt salient, designed to hold the attention of the enemy's artillery and reserves on that side, is advisable so far as it can be arranged for. The Third Army will probably be able to give some assistance of the same nature further to the north.

Possession of the Montauban spur will be of considerable value in preparing for the subsequent attack of the enemy on the heights to the north of it, and it would probably be far easier to gain this spur on the first day of the attack than later on. Possession of Montauban village and the Briqueterie would give a strong defensive position on your right provided the knoll north of Hardecourt and the spur from Maricourt Wood to Curlu are simultaneously secured. There is every reason to suppose that the French would undertake the attack on these last-mentioned features, and it is possible that their artillery may be able to help in your attack on Montauban and the Briqueterie.

(4) As regards artillery preparation, the possibility of surprising the enemy and the effect on his 'morale' both seem likely to be greater as a result of a comparatively short intensive bombardment immediately preceding the assault than if the bombardment is spread over a longer period. Your further consideration to this question is therefore desirable.

(5) As regards the time that must elapse between different phases of the operations there is no room for doubt that the more rapidly you can pass from one phase to the next the more far-reaching is success likely to be, and the less the losses likely to be suffered—always provided that such artillery preparations and reorganization as may be really necessary are carried out; but remembering that the more the enemy can be pressed while he is shaken the less need there will be for a long artillery preparation.

(6) I am to invite your attention to remarks on the use of cavalry made by the Commander-in-Chief at the Conference of Army Com-

manders held at Aire on the 18th March 1916. These remarks are contained in notes which have been issued to you (No. O.A.D. 291/9, dated G.H.Q. 24-8-16).

Opportunities to use cavalry, supported by guns, machine guns, etc., and infantry, should be sought for, both during the early stages of the attack and subsequently. So far as possible probable opportunities should be foreseen and all possible preparations made beforehand to enable them to be taken advantage of.

THE SOMME
AMENDED PLAN SUBMITTED BY THE
FOURTH ARMY TO G.H.Q. 19TH APRIL
1916

Map 2. In reply to G.H.Q. No. O.A.D. No. 710 of the 12th April 1916,
Sketch 2. I beg to submit the following remarks :—

1) Certain information, not previously at my disposal, has been communicated to me both verbally by the Commander-in-Chief and in your letters Nos. O.A.D. 710 and 710/1 of 12th April, 1916, since I submitted my proposed plan on the 3rd April (G.X.3/1).

2) Of this information, the most important points are as follows :—

- a) The objectives on the capture of which the Commander-in-Chief places the most importance.
- b) The direction in which our advance is to progress in the event of the initial attacks being successful.
- c) The proposed introduction of one or more French divisions between the right of the Fourth Army and the Somme.
- d) The nature of the co-operation on the part of the French north of the Somme.

3) This information alters to a considerable extent the situation on which my plan was originally based, and calls for certain alterations in it, in order to enable me to carry out the Commander-in-Chief's instructions as now laid down in the above-quoted letters.

4) The troops that will be available for the Fourth Army offensive remain, I understand, as laid down in your letter No. O.A.D. 644 of the 25th March, that is to say, 17 divisions with approximately 200 heavy howitzers.

5) There are five questions raised in your letters No. O.A.D. 710/1 of 13th April, which I will endeavour to deal with seriatim :—

- (i) The objectives to be attained in the first instance.
- (ii) The possibility of including Montauban and the Briqueterie in the first objectives to be reached, thus extending the defensive flank on the right from where I originally proposed to place it to the Briqueterie—Maricourt ridge.
- (iii) The extent of activity that may be possible against the Gommecourt salient.

- (iv) The possibility of employing a comparatively short, intense, bombardment, as opposed to one extending over 42 to 72 hours, as I originally proposed.
- (v) The proposals for a further advance to seize Ginchy and Bazentin le Grand.

The objectives to be attained in the first instance.

6) Before suggesting the limits of the first phase of the attack, I gave all the factors which affected the selection most careful consideration, after personally studying the ground and weighing the pros and cons from every point of view.

These factors were explained in paragraphs 24 to 30 of my letter of the 3rd April.

I came to the conclusion that two courses were open to me. The first, and most alluring one was to attempt the capture of the whole of the enemy's lines of defence as far south as the Albert—Bapaume road in one attack. The second, less ambitious but in my opinion more certain, to divide the attack into two phases, the first of which would give us possession of the enemy's front system and all the important tactical points between the front system and the second line. The second phase to follow as soon as possible after the first, so as to give the enemy as little time as possible to construct new defences and bring up guns and reserves.

The first alternative, I considered, was a gamble which involved considerable risks. My reasons for this view, as explained in paragraphs 29 to 31 of my letter of the 3rd of April, were briefly as follows :—

- (i) The distance to be covered by the infantry between the front system and the German second line.
- (ii) The strength of the fortified villages of Pozières and Contalmaison.
- (iii) The strength of the German second line, which consists of front and support trenches, and is well wired throughout.
- (iv) The serious difficulty of cutting the wire in front of this line at a range of 3,000 to 4,000 yards from our front trenches.
- (v) The probability that the German reserves could man the second line before our assaulting troops could reach it.
- (vi) The difficulty of supporting our infantry with artillery fire, should they gain a footing in this second line.
- (vii) The fact that a very large part of the troops to be engaged are new troops with little experience, and amongst whom the standard of discipline, leadership and tactical training of company commanders, is not what obtained in our troops of a year ago, and amongst whom, therefore, disorganization will appear more quickly.

7) After further consideration, it still seems to me that an attempt to attain more distant objectives, that is to say, the enemy's second line system, under the conditions above described, involves considerable risks. I, however, fully realize that it may be necessary to incur these risks in view of the importance of the object to be attained. This will, no doubt, be decided by the Commander-in-Chief, and definite instructions sent to me in due course. It is also possible that the situation may change before the attack takes place. I have, therefore, arranged my revised plan so that, should it be

decided to capture the objectives included within the green line¹ in one attack, the orders and preparations for carrying out this attack will have been prepared. On the other hand, if it is decided to carry out the attack in two phases, as originally proposed, it will only be necessary to modify the orders to a small extent.

8) There is one further point that I would like to submit for consideration.

Should it be found impossible to capture the enemy's second line in the first attack, and should the troops making the attack fail to gain their objective, I consider that the whole operation may be retarded to a greater extent than would occur should the attack be made in two phases as I originally proposed.

This seems to me to be an important consideration, in view of the instructions contained in your letter No. O.A.D. 710 of the 12th April, which indicates clearly that these operations are to be sustained over a considerable period of time.

The possibility of including Montauban and the Briqueterie in the first objectives to be attained.

9) In drawing up my original plan, I based my proposals as regards the front and depth to be attacked on certain factors, vide paragraphs 12 to 23 of my letter of the 3rd April. These factors remain unaltered by the information since communicated to me, but the necessity of maintaining a sustained offensive for a considerable period is emphasized by the fact that our objectives include the high ground towards Combles, in order to assist the French in effecting the passage of the Somme.

10) The extension of front to be attacked, so as to include Montauban and the Briqueterie—Maricourt ridge in the first objective, means the addition of one more division to those which will carry out the first attack, that is to say, that four divisions will be required to attack on what was the XIII Corps front, instead of three, and eleven divisions on the whole Fourth Army front, instead of ten. This can only be done by reducing the number of divisions in Army reserve from two to one. It also means the extension of the front to be attacked from 20,000 to 22,500 yards.

Though it is possible to reinforce the XIII Corps by another division from Army reserve, in order to attack Montauban in the first attack, it is not possible to furnish them with an increased number of heavy howitzers to cover and support that attack. I cannot allot what I consider a sufficient number of heavy howitzers to the XIII Corps to make reasonably sure of capturing Montauban, without withdrawing such howitzers from the VIII, X or III Corps, and this I am reluctant to do in view of the stress laid by the Commander-in-Chief on the importance of gaining the line Pozières—Grandcourt—Serre and establishing a defensive flank there.

11) The crowding of troops into the Maricourt salient, under my original plan, was considerable. The handing over of half of this salient to the French involves further congestion, and it seems to me very doubtful whether it will be possible to insert yet further troops into this salient with a good chance of carrying out a successful

¹ See Sketch 2 on which "Objective, 6th June" practically coincides with the green line.

attack. For we know that the enemy can bring a powerful concentration of guns on to this salient from the north-east and south.

12) The original defensive flank which I selected just east of Mametz was one which could be very easily protected by the fire of our own guns.

The defensive flank now proposed does not possess these advantages, for the ground north and north-east of Montauban and the Briqueterie will be very difficult to cover. It is not under our observation, except from the air, and, even when we gain possession of Montauban, it will only be visible from the front line trenches east and south-east of the town.

13) There is one further difficulty, and that is to obtain effective co-operation between my attack along the Briqueterie—Maricourt ridge and the French attack against the knoll north of Hardecourt. This can no doubt be got over, but it is a factor which must be taken into consideration, and it must be remembered that the capture of the Hardecourt knoll by the French in the first attack is very improbable, seeing the narrow front from which they must debouch, and the divergent nature of their attacks.

14) There is no doubt that the question as to whether Montauban is to be attacked simultaneously with our first advance and with the French, or whether the attack is to be made after we have captured the high ground about Pozières, is a very difficult one, and I fully realize that there may be highly important reasons connected with the co-operation of the Allied armies which should over-rule the tactical disadvantages which I have endeavoured to represent in the preceding paragraphs.

The extent of activity that may be possible against the Gommecourt salient.

15) The possibility of including Gommecourt amongst the first objectives to be attacked is, to my mind, purely one of men and guns. I did not include it in my original plan of attack because I considered that a 20,000 yards' front was as much as the troops at my disposal could undertake with reasonable hope of success.

The necessity of keeping sufficient troops in reserve to maintain a sustained offensive for a considerable period renders this very important.

16) One of the lessons in the Verdun fighting seems to me to be that if operations are to be sustained for any length of time it is absolutely essential to have a sufficient number of fresh troops in hand to relieve those in the front line when they become exhausted. Otherwise there will always be danger of the exhausted troops being pushed back and losing points which are of the greatest tactical importance.

17) There is no doubt that if the attack on the Gommecourt salient could be undertaken as a small independent operation, it would be of considerable assistance to my main attack; but I do not consider that the means at my disposal render this possible for me to undertake, and I would suggest, as far as this Army is concerned, limiting the activity against Gommecourt to a demonstration in which would be included the discharge of gas and smoke.

The possibility of employing a comparatively short, intense bombardment immediately preceding the assault.

18) The advantages claimed for a short, intense bombardment are :—

(i) Surprise.

(ii) The effect on the enemy's moral of a hurricane of shells poured upon him at a very rapid rate.

As regards (i), it would seem very doubtful whether, in the operations under consideration, there is much, if any, prospect of effecting a surprise.

The French, I understand, contemplate a long bombardment extending over several days at least, and it seems to me that our action as regards this question must be, to a certain extent, dependent upon theirs. Moreover, effective wire-cutting cannot be carried out in five or six hours, nor can we carry it out at the same time as the bombardment of heavy howitzers, or the destruction of the enemy's trenches and strong points, on account of the dust and smoke, which will prevent any possibility of accurate observation. The wire-cutting must, in any case, begin at least three days before the bombardment, for there is a very large amount of wire to be destroyed in addition to what is in the front line, far more than was the case at Loos. I presume that wire-cutting will be simultaneously carried out by other Armies.

As regards (ii), bearing in mind the existence of numerous dug-outs and cellars in the enemy's lines, I do not think that the moral effect of a six-hours' intense bombardment will be so great as that of one extended over several days. The effect on moral of a long, accurate bombardment, which will pulverize strong points one by one, gradually knock in communication trenches, prevent reliefs being carried out, and systematically beat down the enemy's defences, will, to my mind, be much greater, especially as with many new gun detachments we cannot expect very accurate shooting in a hurricane bombardment.

A long bombardment gives the enemy no chance of sleep, food and ammunition are difficult to bring up, and the enemy is kept in a constant state of doubt as to when the infantry assault will take place. His troops in the front line must be relieved every 48 hours, or they will break down under the strain, and it will be our business so to regulate our fire as to inflict heavy losses, even at night, on any relieving detachments he may endeavour to bring forward.

19) In addition, as already explained in my letter of the 3rd April, to get assaulting troops forward by daylight into their assembly position is, in this case, extremely difficult, if not impossible.

The alternative is to bring them up by night and keep them in their assembly places during the intense bombardment. This is not at all desirable; it would entail heavy losses both in men and in moral, and is particularly inadvisable with young troops.

20) As regards the actual length of the bombardment preceding the assault, this must depend on the following factors :—

(a) Action of the French.

(b) The amount of ammunition available when offensive operations begin.

- (c) The length of time the gun detachments can work at high pressure without danger of breaking down.

As regards (b) and (c), we must bear in mind that the preliminary bombardment is only the first phase of two or three weeks sustained operations.

I propose to go into this matter more fully before deciding the actual length of the bombardment. This I can do when more information is available as to (1) exactly when the operations will take place, (2) the number of guns and amount of ammunition that will be actually available, (3) the French bombardment and plan of attack.

Proposals for the further advance to seize Bazentin le Grand, Ginchy and the high ground towards Combles.

- 21) Since forwarding my proposals on the 3rd April, the following readjustment of corps has been sanctioned by the Commander-in-Chief, and will, I hope, take place shortly :—

The XV Corps, for the present to consist of the 21st and 7th Divisions, take over from the right of the III Corps to a point south-east of Mametz, with another division in reserve to be added later.

The XIII Corps, as reconstituted, to consist of the 18th and 30th Divisions, holding from the right of the XV Corps to a point north of Maricourt. It is hoped that this corps will also receive a third division in reserve later. The remainder of the line from Maricourt to the Somme to be taken over shortly by the French with one or two divisions.

- 22) The decision as to whether the first attack by the Fourth Army is to reach the line Serre—Grandcourt—Pozières—Contalmaison—Mametz in two phases or one does not really affect the question and will therefore not be referred to.

These proposals, however, do depend to a very great extent on the decision arrived at as regards the attack on Montauban, and the co-operation of the French.

- 23) There appear to me to be two alternatives :—

Alternative (1).

First attack. The VIII, X, III and XV Corps to reach the objectives of the first attack between Serre and Mametz, while the XIII Corps simultaneously attacks Montauban and the Briqueterie, and establishes a flank on the Briqueterie—Maricourt ridge. The French at the same time to attack the knoll north of Hardecourt and Curlu spur.

Second attack. The VIII Corps to maintain a defensive flank Serre—Grandcourt. X Corps to establish a defensive flank Grandcourt—Courcellette. III Corps to attack Martinpuich—Bazentin le Petit. XV Corps to attack Bazentin le Grand—north edge of Montauban. XIII Corps to maintain the flank Montauban—Briqueterie.

Alternative (2).

First attack. The VIII, X, III and XV Corps to attack as in alternative (1). XIII Corps to establish a defensive flank from Maricourt to Pommiers and capture the first line German trenches north of Maricourt. The French to attack Curlu spur.

Second attack. The VIII Corps to maintain a defensive flank

Serre—Grandcourt. X Corps to establish a defensive flank Grandcourt—Courcelette. III Corps to attack Martinpuich—Bazentin le Grand. XV Corps to attack Bazentin le Grand—north edge of Montauban. XIII Corps to attack Montauban—Briqueterie. French to attack Hardecourt and Hardecourt knoll.

Whichever alternative is adopted, and supposing these two first attacks be successful, I would suggest that the general outline of the third attack should be as follows :—

VIII Corps to push forward the defensive flank to Serre—Miraumont.

X Corps to push forward the defensive flank to Miraumont—Le Sars.

III Corps to push forward to Eaucourt l'Abbaye—Flers.

XV and XIII Corps to push forward against Longueval, Ginchy, Guillemont, Falfemont Farm. French to push forward to Maurepas.

24) There is no doubt that before making this advance a considerable number of fresh troops will be required. Whether these fresh troops are to be interpolated in the line by divisions or by corps it is difficult at present to foresee. I should say, however, that the probabilities are that, at any rate, during the first and second attacks, that is to say till we reach the line Montauban—Bazentin le Grand—Martinpuich—Courcelette—Grandcourt—Serre, that any reinforcements which are put in should be in the form of divisions sent in to reinforce the five corps in the front line. After we reach that line, before making the third attack, it may be advisable to interpolate one whole corps, but this must depend on the course of events up to that period of the operations.

25) As regards the employment of cavalry, it appears to me that the best use we can make of them is immediately after the attack on the line Grandcourt—Pozières has been successful, and that they may be of the greatest assistance in enabling us to reach the further objectives, if we succeed in inflicting on the enemy a serious state of demoralization. The ground south of the Ancre valley between Miraumont and Courcelette is very open, and at present is unwired. If we can push the cavalry through just south of Grandcourt they will probably be a great help in protecting and assisting forward our left flank during the second and third phases of the battle.

THE SOMME

G.H.Q. LETTER O.A.D. 876 TO
SIR H. RAWLINSON, 16TH MAY 1916
WITH REFERENCE TO THE FOURTH ARMY PLAN

With reference to your memorandum No. G.X.3/1, dated the 12th April 1916, replying to G.H.Q. No. O.A.D. 710, dated the 12th April 1916, and to the various discussions which have since taken place, the Commander-in-Chief desires that the Serre—Miramont spur; Pozieres; Contalmaison, and Montauban be the objectives to be attained during the first day's operations—the inclusion of Montauban being subject to the necessary degree of co-operation by the French on your right flank and to the assistance of the French artillery, for both of which you have made arrangements with General Foch. Map 2.
Sketch 2.

It is understood that you concur in this view, and that your plan of attack will be designed accordingly.

2. A simultaneous attack on the Gommecourt salient will be carried out by the Third Army troops under the orders of the G.O.C. that Army.

3. As regards artillery bombardment, it should be of the nature of a methodical bombardment and be continued until the officers commanding the attacking units are satisfied that the obstacles to their advance have been adequately destroyed.

Simultaneous wire-cutting on the fronts of the First, Second and Third Armies will be arranged for.

4. One cavalry division (the 2nd Indian Cavalry Division) will be at your disposal during the operations.

5. I am desired to impress upon you the urgent necessity for the closest supervision of the training of all troops detailed to take part in the attack. The degree of success obtainable depends very much on the thoroughness of previous training and instruction as well as to the completeness of the preparations made to ensure efficient co-operation and a readiness to meet adequately every emergency that may arise.

THE SOMME

G.H.Q. LETTER O.A.D. 912 ADDRESSED BY
G.H.Q. TO GENERAL SIR H. RAWLINSON
27TH MAY 1916WITH INSTRUCTIONS AS TO PREPARATIONS FOR
THE BATTLE

1. Preparations for taking the offensive on a large scale are being made on two sections of our front, viz.—

- (a) By the Second Army, and
- (b) By the Fourth Army and a portion of the Third Army.

2. It is not yet certain which of these attacks will be launched first. In the event of (b) being decided upon, then the First, Second and Third Armies will take steps to deceive the enemy as to the real front of attack, and wear him out and reduce his fighting efficiency both during the three days prior to the assault and during the subsequent operations. On the other hand, if (a) takes place first, then, of course, the role of the flank Armies will become changed. But preparations for deceiving the enemy should be made without delay on the supposition that (b) attack will be made first. This will be effected by means of:—

- (a) Preliminary preparations such as advancing our trenches and saps, construction of dummy assembly trenches, gun emplacements, etc.
- (b) Wire-cutting at intervals along the entire front with a view to inducing the enemy to man his defences and causing fatigue.
- (c) Gas discharges, where possible, at selected places along the whole British front, accompanied by a discharge of smoke, with a view to causing the enemy to wear his gas helmets and inducing fatigue and causing casualties. (See attached paper marked "A" on use of gas.)¹
- (d) Artillery barrages on important communications, with a view to rendering reinforcement, relief and supply difficult.
- (e) Bombardment of rest billets by night.

¹ Not reproduced.

- (f) Intermittent smoke discharges by day, accompanied by shrapnel fire on the enemy's front defences with a view to inflicting loss.
- (g) Raids by night, of the strength of a company and upwards, on an extensive scale, into the enemy's front system of defences. These to be prepared by intense artillery and trench mortar bombardments.

The above means should be so combined as to produce the greatest effect. A note on wind, together with charts showing the direction of the wind during June, July and August, for the past 10 years is attached marked "B".¹ Arrangements should be based on utilising any wind between W.S.W. and S.S.W.

3. Armies should make arrangements to carry out operations as indicated above on the basis of resources being made available as in attached table marked "C" for attack (b).¹

The allotment in ammunition for the First and Second Armies covers the whole period up to 13 days subsequent to the assault.

The allotment in ammunition for the Third Army includes that required for offensive operations at the Gommecourt salient, and for 13 days subsequent to the delivery of the attack.

The allotment in ammunition for the Fourth Army includes preliminary operations, bombardment, day of assault, and 13 days subsequent fighting.

As regards the amounts allotted to Third and Fourth Armies for offensive operations, it is to be understood that ammunition should be expended during the opening stages of the operation as required, irrespective of allotment. The figures represent an expenditure which it is anticipated will meet all requirements for the period named.

A further allotment of ammunition will then be made for the continuance of the battle.

¹ Not reproduced.

THE SOMME

G.H.Q. LETTER O.A.D. 12 TO GENERAL SIR
H. RAWLINSON, 16TH JUNE 1916 STATING
THE OBJECTIVES.

Map 1. 1. The Third and Fourth Armies will undertake offensive operations
Sketch A. on the front Maricourt—Gommecourt, in conjunction with the French Sixth Army astride the Somme, with the object of relieving the pressure on the French at Verdun and inflicting loss on the enemy.

The First and Second Armies, and the Third Army North of Gommecourt, will operate at the same time, with a view to misleading and wearing out the enemy and preventing him from sending reinforcements to the scene of the main operations.

2. The various objectives of the Fourth Army operations are described below :—

(a) First objective. To seize and consolidate a position on the Pozières ridge extending from the vicinity of Montauban to the River Ancre, so as to secure good observation over the ground to the eastward of that ridge.

Simultaneous with the above, to seize and consolidate a good position between the River Ancre and Serre, so as to cover the left flank of the operations south of that river.

(b) Second objective. Having secured a position on the Pozières ridge as described above, to turn that position to the best account against the hostile troops.

This may be accomplished in different ways, depending on how the battle develops :—

- (i) The enemy's resistance may break down, in which case our advance will be pressed eastwards far enough to enable our cavalry to push through into the open country beyond the enemy's prepared lines of defence. Our object will then be to turn northwards, taking the enemy's lines in flank and reverse, the bulk of the cavalry co-operating on the outer flank of this operation while suitable detachments should be detailed to cover the movement from any offensive of the enemy from the east. For the latter purpose the line Bapaume—high ground east of Mory—high ground west of Croisilles—Monchy-le-Preux is of tactical importance.

The front gained between the Rivers Somme and Ancre must meanwhile be maintained by part of the forces available.

- (ii) Alternatively, after gaining our first objective, as described at (a) above, we may find that a further advance eastwards is not advisable.

In that case the most profitable course will probably be to transfer our main efforts rapidly to another portion of the British front, but leaving a sufficient force on the Fourth Army front to secure the ground gained, to beat off counter-attacks, and to keep the enemy fully employed. For the last-mentioned purpose further local offensives will probably be necessary in order to continue the battle, to compel the enemy to use up all his reserves, and to prevent him from withdrawing them elsewhere. Such local offensives might take the form of attack on hostile strong points in the front of the Fourth Army with a view to improving the position held, or of a move northwards in co-operation with the right of the Third Army against the enemy still holding the defences in front of the latter.

3. The dates of the commencement of the bombardment and of the day of assault will shortly be fixed and will be notified to Armies.

THE SOMME

G.H.Q. LETTER O.A.D. 15 TO GENERAL SIR
H. RAWLINSON, 20TH JUNE 1916 WITH
REGARD TO SHORTENING THE BOM-
BARDMENT.

O.A.D. 15.

1. With reference to the points discussed with you on Sunday last, and to the information regarding ammunition supply given to Army commanders at the conference held at St. Pol on the 15th instant, the Commander-in-Chief desires to be furnished as soon as possible with a final programme of the preliminary bombardment which you intend to carry out during the forthcoming operations.

2. As already explained, it is not desired to fetter your discretion in the matter, and it is essential that the artillery preparation should be thorough; but unless due regard is had to the limitation in the ammunition supply available and to the effect on the guns of prolonged and heavy shooting, the continuance of offensive operations during the summer may be seriously prejudiced. It is therefore necessary to use your utmost endeavours to ensure the attainment of the desired results without expending more ammunition than is required to effect that purpose.

3. The programme already submitted by you includes a large number of apparently intense bombardments, some of considerable duration, and amounting in the aggregate to $8\frac{1}{4}$ hours. The Commander-in-Chief desires that you will carefully consider the possibility and advisability of reducing the number and duration of these, which entail a very heavy strain on the guns, as well as a great expenditure of ammunition. Against heavily manned trenches, or immediately preceding infantry assault, such bombardments are likely to give good results, but their value against lightly manned trenches and when not followed by assault, is open to doubt.

It is also very questionable whether a three days' bombardment (in addition to wire-cutting) is not as effective as one lasting four days—a view in which the Commander-in-Chief understood you agreed with him in the discussion on Sunday last.

4. The programme to be submitted should give all details, including objectives, in connection with any periods of intense concentrated fire that you propose to deliver, and an estimate of the expenditure of ammunition that will be entailed prior to the delivery of the assault.

THE SOMME

NOTE O.A.D. 17, DATED 21ST JUNE 1916 OF
COMMANDER-IN-CHIEF'S INSTRUCTIONS
IN AMPLIFICATION OF O.A.D. 12, ISSUED
16TH JUNE 1916.

1. According to our Intelligence, the enemy has only 32 battalions **Map 1.** now on the Fourth Army main front of attack, and he can make **Sketch A.** available during the first six days only some 65 additional battalions in all, as reinforcements.

We shall therefore have considerable numerical superiority, and prompt action taken to develop a success gained in the assault on the first objective assigned may give great results.

2. If the first attack goes well every effort must be made to develop the success to the utmost by firstly opening a way for our cavalry and then as quickly as possible pushing the cavalry through to seize Bapaume and establish itself in good positions in that neighbourhood. The cavalry in G.H.Q. reserve (1st and 3rd Cavalry Divisions) under Lieutenant-General Sir H. Gough, is placed at the disposal of the G.O.C. Fourth Army for the above purpose, and should be disposed in positions of readiness to take immediate advantage of a favourable situation.

3. The advance of the cavalry should be supported by such divisions of the Fourth Army as may be necessary. It is considered that these supporting troops also should be placed under General Gough's orders when he advances.

4. In addition to thus seizing Bapaume the Fourth Army should secure the high ground about Ginchy and, if found advisable, towards Morval. The heights east of the Combles valley form the objective of the French troops.

5. When the cavalry has seized Bapaume it should be relieved there by the supporting troops so that it may be set free for co-operation in a further move northward. This further move northward is to be organized by the G.O.C. Fourth Army as quickly as possible (from the troops at his disposal including the cavalry) after Bapaume has been seized. It will be directed so as to take the enemy's trenches in reverse starting with its left in touch with the VIII Corps and its right extending (probably) to the ridge east of Irlles. Sir H. Gough will be at the disposal of the G.O.C. Fourth

Army to command the troops (including cavalry) allotted to this attack.

6. The II Corps in G.H.Q. reserve remains at the disposal of the Commander-in-Chief (but administered and billeted until further orders by the Fourth Army) and is not to be moved without his authority.

The Commander-in-Chief will employ this corps, according to circumstances, to reinforce either the Fourth Army, the Third Army, or elsewhere according to the situation, and Sir H. Rawlinson is not to count on having it at his disposal.

The Commander-in-Chief hopes that the forces already allotted to the Fourth Army will prove sufficient without the II Corps, to carry out the operations described above.

7. The Third Army will co-operate in the northerly movement by general pressure on the enemy's front, and by pushing in local attacks. The Commander-in-Chief may possibly reinforce the Third Army for this purpose.

PREPARATORY MEASURES TO BE TAKEN BY ARMIES AND CORPS BEFORE UN- DERTAKING OFFENSIVE OPERATIONS ON A LARGE SCALE

PRINCIPAL POINTS TO BE ATTENDED TO IN MAKING PRELIMINARY ARRANGEMENTS

Note :

The list given only enumerates the chief points that have demanded attention in the past and is not exhaustive. Each attack must be thought out in every detail, and all arrangements be worked out beforehand as completely as possible.

Appendices are attached showing some of the arrangements made in the First Army for the 25th September, 1916. These are concerned with :—

Preparations for use of gas,	Appendix A.1, A.2, and A.3.
Bridging arrangements,	Appendix B.
Divisional Preparations,	Appendix C.

1. RECONNAISSANCE.

1. Before the scheme of attack can be formulated, reconnaissance on the following points is necessary :—
 - (a) The ground over which the attack is to take place.
 - (b) The enemy's system of trenches, namely, his front trenches, support trenches, machine-gun emplacements, communication trenches, rear lines, strong points in any of the lines, wire.
 - (c) The points from which his wire can be seen by artillery observers of batteries cutting wire. These points should be close up to the front line.
 - (d) The limits of effective artillery support without change of gun positions.
2. A great deal of the above can be obtained from study of aeroplane photographs, but personal observation from good observation stations is also needed.
3. Information gained thus must constantly be added to from information obtained by patrolling and observation.

4. Infantry and artillery commanders in charge of sections of the attack should, together, carefully study the ground the attack is to go over and the enemy's trenches, both from their trenches, and from the artillery observation stations to make sure they are in agreement over the plan intended to be carried out. This includes commanders of assaulting battalions and batteries in their support.
5. Reconnaissance for reserve formations is as important as for front line formations.

2. INTELLIGENCE.

Intelligence matters requiring arrangement are :—

- (a) Collection of information about the enemy's position and of the country ahead, and the dissemination of information gained.
- (b) Maps. Arrangement for scale of issue of new maps required. Trench maps for reserve formations and cavalry.
- (c) Contre-Espionage. Measures to deal with agents left behind by enemy. Organization of Intelligence police to search for these. Special training required by these.
- (d) Secrecy. Misleading of enemy by false rumours.
- (e) Location of enemy local and army reserves. Calculations as to their probable entry into the battle both as regards time, place and strengths.
- (f) In conjunction with A.P.M. establishment of lines of control to check civilian movement, especially a rush back to recaptured villages.

3. ORGANIZATION OF TRENCHES FOR THE ATTACK.

This includes :—

- (a) Advancing front trenches to within assaulting distance.
- (b) Preparation of forming up places.
- (c) Digging of communication trenches.
- (d) Sapping forward for communication trenches.
- (e) Putting up direction boards.
- (f) Preparation of exits from trenches.
- (a) The front line should be within 200 yards of the enemy's front line and should, if necessary, be advanced to this distance. In order to deceive the enemy as to the point of attack, it is desirable to do this also on fronts where no attack is intended.
- (b) Work under (b) requires very careful consideration. There is no stereotyped method of making assembly trenches. The essentials are that there must be easy egress both above ground and by communication trenches, that the assaulting troops are close enough up, and that the general line of the assembly trenches is about perpendicular to the line of advance. Subject to the above considerations concealment is desirable and advantage should therefore be taken of folds in the ground. Straight lines are not good as they are more obvious and are easier for hostile artillery to range on.

Concealment can be obtained by conforming the system of assembly trenches, as far as possible, to the existing system of

trenches. The regular rectangular system of places d'armes is very conspicuous.

When working out accommodation required for assaulting troops, care must be taken not to omit the forming up places for the various parties such as grenadiers, working parties, etc.

The reserves of battalions can well be accommodated in sidings off their "up" communication trench. Great care must be taken to make these as little obvious to aircraft as is possible.

In short, the exact position of every man in our system of trenches prior to the assault must be worked out and prepared. This will include the position of reserves.

- (c) Work under (c) will probably demand an increase in the number of existing communication trenches.

Up to within about 800 yards of our front line two communication trenches per brigade frontage (one trench for up and one for down traffic) may suffice.

For the last 800 yards it will be necessary to have at least one "up" and one "down" communication trench to each Battalion front of attack.

Between the front lines of trenches the number of communication trenches will require a further increase.

A map showing up and down traffic in communication trenches must be prepared. This map must show which trenches are available for stretchers.

Regimental police will be required in communication trenches to regulate traffic. Up and down trenches must be clearly marked with boards giving names of trenches and whether they are for "up" or "down" traffic.

- (d) Saps must be pushed forward as far as possible to facilitate making communication trenches between the two opposing lines after the assault. The entrances to these saps should be dug under front parapets and if time allows continued by making Russian saps instead of saps above ground.
- (e) Direction boards are very necessary and must be plainly marked.
- (f) Exits from trenches must be prepared. These can either be provided by sandbag steps or by ladders. If ladders are used, all those in one bay should be fixed together top and bottom by planks, to prevent a ladder falling. Care must be taken that the tops of ladders do not project over the parapets. Stakes 3' to 4' long driven into the parapet to act as handles when climbing up the ladders are most useful. Bridges over our front lines may be required for the rear lines of the assaulting troops.

4. ARTILLERY PREPARATION.

1. The organization of the artillery on a comprehensive scheme must be part of the original plan.
The general principles are :—

- (a) That a divisional commander, to whom a definite objective is assigned, should have under his orders the artillery which is necessary to enable him to carry out his task. This will include not only the normal divisional artillery but such other guns as are detailed to prepare his objective for assault.
- (b) That the control of the artillery detailed to tasks other than

the above may be more centralized (counter-batteries, guns and howitzers for long range barrages and to bombard localities behind the enemy's front the destruction of which requires concentrated artillery fire).

2. Detailed arrangements for aerial observation, so that the R.F.C. and artillery personnel may work together as long as possible, and get into close touch.
3. Registration should be spread over a long period, so as to avoid indicating the points of attack.
4. Preparation of Time Table of Artillery fire to support the advance. This time table requires to be drawn up with great care.
5. Protection. Thorough protection of batteries and observing stations is most valuable. In certain cases, however, it may be preferable to forego this rather than risk the giving away of a valuable position which has not been located.
6. Observing Stations. As many alternative observing stations as possible should be selected and thoroughly prepared. With a view to an advance officers should carefully study the ground and select suitable places for observation. These may be within our front line, and in this case can be prepared beforehand ; but they will more often be within the enemy's present line, and in this case it will be possible only to select such stations and detail them to batteries.
7. The use of single guns dug in along the front line is often valuable to deal with hostile machine gun emplacements or to breach the parapets. Their positions will require careful preparation and selection.
8. Emplacements close up to the front line will probably be required so that guns may be ready to support the infantry as the advance progresses. These may be occupied by guns placed in position previous to the attack. In this case the guns will not disclose their positions till the necessity for their fire arises. If all the artillery required for this purpose is not available at first, batteries to move forward to these emplacements must be previously detailed.
9. Communications.
 - (a) Artillery telephone wires should be laid, like those for general purposes, in special trenches dug for the purpose. When very exposed this entails digging trenches five or six feet deep to allow linesmen to pass up them in order to repair cables.
 - To avoid unnecessary trenches the routes which lines will follow should be co-ordinated in a general plan.
 - (b) Spare instruments, exchange boards, and cable should be collected with a view to future requirements.
10. Roads and routes will require attention.
 - (a) To improve approaches to battery positions for supply of ammunition.
 - (b) With a view to an advance ; this may entail the provision of material to enable batteries to cross trenches, and the construction of bridges over our trenches beforehand. The provision of trolley lines for supply of ammunition to the heavy howitzers may be necessary.

11. Mobility of heavy guns and howitzers. Arrangements must be made to bring forward the heavy tractor-drawn artillery in the wake of an advance. The different rates of travel of the various equipments and the weights of loads will have to be studied. This especially affects the question of bridges over obstacles within the German lines.

5. GAS.

The employment of Gas demands many preliminary arrangements concerned with :—

Reconnaissance of front for employment.

Construction of emplacements.

Placing of cylinders in position.

Combination with smoke.

Distribution of special companies.

Special arrangements for timing gas discharge.

These are dealt with in Appendices A.1, A.2 and A.3.

6. OBSERVING POSTS.

A scheme for providing the necessary observation posts for Divisional and Brigade Commanders and Staffs, provided with adequate accommodation and bomb-proof cover, should be worked out in conjunction with the artillery. It will sometimes be necessary to use artillery observing stations to obtain the best view and to economise communications. This entails extra provision of accommodation which must be foreseen and prepared for.

7. COMMAND POSTS.

Shell-proof Command Posts must be provided. O.C. Signals will require early notice of the position of these, so that a good and economical system of communications can be arranged. The protection of these posts will require attention.

The requisites of a good Command Post are :—

(a) It must be shell-proof.

(b) Covered ingress and egress should be provided.

(c) It must fit in with the Signal Scheme.

(d) A good protected observation post should be available close by.

(e) Accommodation (protected) is required for the numerous orderlies, etc.

8. SIGNAL SERVICE.

(1) Prior to the attack.

The establishment of a good Signal system, of which communication by telegraph and telephone is the most essential part, requires considerable time, labour and material. A definite scheme of how the desired communications will be best obtained must be made out well beforehand, and worked on from the first. Effort must be concentrated on essential communication; too elaborate communications will fail for want of maintenance. The existing system established for defence will require modification, but should be worked into the scheme, and economy of material studied.

Every unit must be prepared to move forward with its full

establishment of Signal equipment. Stringent orders are necessary that this equipment is not expended prior to the move.

Trenches must be kept clear of obstruction by cables. No badly secured cables should be tolerated in or crossing communication trenches. Hastily laid cables must be run outside the trenches.

In enlarging communication trenches or digging assembly trenches, cables must be safeguarded.

The points to which head-quarters of formations will move forward as the attack progresses should be determined and provision made to maintain communication.

All concerned should be informed of the alternative ways by which they can communicate.

Sites for visual signalling stations within our lines should be selected, and the points within the enemy lines where visual signalling connection may be obtained, settled on, and personnel detailed.

The allotment of Short Range Wireless Sets to formations, and definite instructions as to where they are to be established, must be arranged and all concerned be informed.

The code to be used for wireless messages must be decided on and issued.

The allotment of Pigeon Stations and the arrangements made for the replenishment of birds and delivery of messages from lofts requires arranging.

Communication by flags, signalling discs, rockets, flares, or coloured smoke, and the significance of code signals requires arrangement and communication to all concerned.

The routes with a chain of runners previously detailed will be decided on. Suitable arrangements will be made for forwarding the messages received by runner to addressee.

Men will be detailed to run the cable from our trenches into the hostile trenches, and points fixed from which cable communication is first to be opened in the hostile trenches.

If several cables or enamelled wire, starting from different points in a trench, are run to converge on one point in hostile trench, the chances are some of them will get there and communication may remain through for some time. The most favourable moment to get the cables across is just after the first rush, and before the hostile artillery have opened fire.

(2) On occupation of the first line hostile trenches.

Establish, strengthen and protect as far as possible, the signal stations established.

Some of the intended methods of communication will have proved successful; others will have failed.

There will be uncertainty as to the points with which communication has been established. Steps must at once be taken to divert messages to the channels established.

Sign-posts placed in the hostile communication trenches will assist bearers of messages to find the Signal Office.

Hostile cable may be useful to prolong our cable lines; indiscriminate cutting of hostile cables to be forbidden.

As advance progresses, extend cables at least up to Advanced Brigade Head Quarters.

Bury the cables between the trenches when opportunity offers, generally the first night.

(3) A General Advance.

When troops are on the march forward few opportunities will occur for communication by telegraph or telephone, and Despatch Riders will be the main means of communicating.

As a general rule cable lines should only be laid out when the situation is sufficiently definite to justify their use and then only to such an extent as will leave a reserve in hand.

A telegraph line from Brigade to Division, and Division to Corps will generally be all that is possible.

Signal offices in any formation are to be kept to a minimum.

In selecting positions for Report Centres or Head Quarters, consideration must be given to the facilities for communication.

It will often be advisable for formations to specify in what places the head-quarters of those under their command are to be.

Arrangements will be made to safeguard and recover the Signal equipment which has been left behind in the positions previous to the attack.

Maps of the civil telegraph routes existing before the War have been issued to Signal Units. These lines may have been cut, but the poles will probably remain.

9. MACHINE GUNS.

The use of machine guns to support the attack by direct or indirect fire requires consideration.

Some machine guns must be held ready to go forward early to assist in holding captured positions. R.E. may be required to assist in making emplacements. The material for these must have been previously stored near at hand.

10. INFANTRY.

The special points to be attended to are as follows :—

1. Special training required (marching, work in open country, outposts, visual signalling, etc.).
2. Rehearsal of attack.
3. Fitting of boots.
4. Bringing up of great-coats (if not carried in attack).
5. Employment of special parties (grenadiers, working parties, etc.).
6. Employment of pioneer battalions.
7. Issue of special equipment (wire-cutters, special signals, etc.).
8. The load to be carried by each man must be laid down. It is impossible to keep this load very low, and the following scale is suggested :—

200 rounds S.A.A.

One day's rations.

Two sandbags.

One pick or shovel to every third man.

Grenadiers require special equipment.

9. In addition to the above, attention must be paid to the provision of such special stores as are required, such as :—

Extra wire-cutters.

Devices for showing our position to our artillery and to aircraft.

Possibly smoke candles.

NOTE.

See Appendix "C" for arrangements made by Divisions previous to September 25th, 1915.

11. CAVALRY.

Arrangements and reconnaissances must be made to facilitate advance up to and through trench lines, and for avoiding the cutting of telephone wires.

12. R.E.

The considerations under this heading are as follows :—

- (a) Employment of R.E.
- (b) Establishment of depots of stores.
- (c) Provision of road and railway material.
- (d) Arrangements for bridges on the advance.
- (e) Closing of special establishments no longer required, such as sawmills, workshops for trench materials, etc.
- (f) Attachment of Infantry carrying parties to R.E.
- (g) Administrative arrangements.
- (a) Previous to assault.

The C.E., or C.R.E. as the case may be, should be informed at the earliest possible moment of the nature of the operations so that he may be able to take measures to obtain all the information he requires and make his plans for the distribution of the R.E. Companies available, (including perhaps the Tunneling Companies and other special units) to the best advantage.

The R.E. must be carefully husbanded, and should not be employed on any work that can be performed by the infantry, e.g. on digging assembly trenches, clearing wire. They should be used, with such non-technical assistance as is required, for technical work in the preparation of the trenches, such as making and fixing ladders, constructing bridges for the passage of trenches and entanglements, constructing special machine-gun emplacements, command and observation posts. They may be required to assist the R.A. in strengthening artillery observation stations, constructing emplacements in front line, etc. The improvement of the communications :—strengthening and increasing the number of bridges, improving roads, making column ways, and improving the main communication trenches should be done under R.E. supervision ; also the provision of additional aid posts and dressing stations.

During an attack.

As far as possible, R.E. companies should be kept in hand to be used when required for such work as to fortify a flank or a captured position. They must not be frittered away by pushing sections forward with the assaulting columns. The system of placing Field Companies " at the disposal of Brigades " is not sound. They may be temporarily attached for specific engineer purposes but must be available to be transferred from Brigade to Brigade as required. Before sending Sappers forward to work, engineer reconnaissances should be carried out.

When allotting R.E. Companies before an attack, the guiding principle should be to keep them in reserve till they can be sent forward for a definite object. The C.R.E. of a Division

would remain with the Divisional Commander and O.C. Field Companies at Brigade Command Posts so that R.E. may be detailed for work as soon as the necessity for their employment arises.

The use to be made of Tunnelling Companies and of Labour Battalions must be considered. These will probably be needed to repair roads behind the advancing troops.

- (b) Depots of tools and R.E. Stores, and made-up material should be arranged in depth; small ones near the front trenches, larger ones further back and main ones as far forward as it is advisable to place them, so that continuous replenishment can be set in motion. Plenty of the stores, etc. should be made up in man-loads for different purposes, digging sets, loop-holing sets, portable knife rests, sandbags, but provision must also be made for getting stores forward by horsed transport. Guide posts to the depots should be put up.
- (d) Bridging arrangements are dealt with in Appendix "B".
- (f) Infantry to carry stores for R.E. should be previously detailed. About 100 per Field Company will usually be required.
- (g) The supply of rations and water to R.E. units after an attack must be arranged for by the units themselves.

13. EMPLOYMENT OF AIRCRAFT AND ANTI-AIRCRAFT, ETC.

1. The employment of the above during the preliminary bombardment, in the attack, and in a subsequent advance must be previously thought out and arranged for.

2. The following points require consideration prior to an attack or a general advance by the Army :—

(a) Reconnaissance. Armies will be responsible for their fronts up to 25 miles in front of their advanced troops. Beyond that reconnaissances are ordered by G.H.Q.

(b) Artillery observation. Army and Corps counter battery areas must be allotted with due regard to the plan of operations.

Careful arrangements are necessary to ensure prevention of jamming of wireless. Wireless to and from the air is controlled by H.Q., R.F.C., and wireless on the ground by the O.C., Wireless, G.H.Q. They work in close touch and no alteration in wireless methods, or procedure, must be made without reference to one or the other. Arrangements must be made for the carriage of wireless operators and equipment by units to which they are allotted. Corps are entitled to four carts for the carriage of this equipment in the case of such H.Q. as have no suitable transport of their own. Horse and motor drawn artillery units can carry their operators and material.

(c) Bombing. Armies will undertake air bombing raids within the Army reconnaissance area (see paragraph (a)).

(i) In connection with their operations.

(ii) With a view to causing the enemy to withdraw hostile aeroplanes and anti-aircraft defences for the defence of back areas.

Machines doing artillery, photographic and similar work should carry a few bombs to drop on any favourable targets presenting themselves.

Similar bombing raids at a greater distance from the front

will be ordered by G.H.Q. to be carried out by G.H.Q. Squadrons or by Armies.

In the event of advance corps squadrons will only be required by corps in contact with the enemy. The squadrons formerly attached to other corps will automatically cease to be so attached and will come directly under the G.O.C., R.F.C. Brigade for employment under Army orders in the attack of the enemy's retreating columns with bombs and machine gun fire.

(d) Protection. Protection of artillery, photographic and similar machines is best secured by an active aerial offensive, carried out by offensive patrols and bombing raids. Direct protection of the above machines should be reduced to a minimum. It should be remembered that as the front advances so the offensive patrols should be sent further out. This point is sometimes overlooked.

(e) Aeroplanes for work with advanced troops. Armies will have to make arrangements to be able to accommodate and have an aerodrome ready at very short notice, for a squadron to work with the Cavalry. This Squadron will be detailed beforehand by G.H.Q. It may either be a special squadron to work altogether with the Cavalry, or a Squadron detached from an Army to work with them temporarily. Flying Corps liaison officers will be attached to each Cavalry Division. Horsed transport for their supply of petrol and oil is necessary. Arrangements will be made by G.H.Q.

(f) Contact Patrols. Every opportunity should be taken prior to an offensive to practise the R.F.C. and the infantry formations with which they will be working, in contact patrol work.

(g) Communications. Maintain telephonic communication between the units of the Royal Flying Corps and the Head Quarters of units with which they are co-operating.

(h) Petrol and Lubricants. To lessen congestion of road traffic arrange for extra supplies of petrol and oil to be dumped at aerodromes and other suitable places some days prior to an advance.

(i) Railway accommodation for Aircraft Parks. Army Aircraft Parks move forward with the Head Quarters of the Army to which they belong. They will require from 6 to 10 trucks railway accommodation to move their stores. They should be accommodated near a railway.

(k) Landing grounds. Landing grounds should be selected by an officer of the Royal Flying Corps. Royal Engineers will be required in preparing new landing grounds, felling trees, levelling, cutting fences, etc.

(l) Reserve. In a forward move, or in the event of a big attack, it may be necessary to place Squadrons attached to Armies under the direct orders of G.H.Q. Any Squadron so selected would remain at the aerodrome it occupies but would come under the orders of the G.O.C., R.F.C. Or, it may be necessary to move a G.H.Q. Squadron into an Army area.

(m) Housing of aeroplanes. A Squadron with its establishment of transport is only able to move 6 light tents, leaving half the machines in a Squadron without cover. This is not a serious matter after May, but before that date it is advisable to arrange for the bringing up of extra tents.

(n) Transport. A Squadron can arrange for its supply of petrol and oil from the railhead provided the Squadron is not more than 25 miles from a railhead. Beyond that distance the assistance of

the Army transport will be required. The chief difficulty on this point is that the amount of petrol and oil required cannot be laid down. On some days a Squadron will expend 500 to 600 gallons during the 24 hours and on other days a negligible quantity.

A Squadron without its transport is useless as it cannot effect repairs.

Pontoons cannot take 3-ton motor lorries, therefore in the event of destroyed bridges it may not be possible for Squadrons to move up.

14. FORMING UP PLACES FOR RESERVES.

In fixing these, concealment from direct observation and from aircraft is the first consideration. It has been found that the enemy's barrage is invariably established within a few hundred yards of our front trench. The long communication trenches dug by us from Noeux les Mines, and by the French in Champagne, proved unnecessary.

Assembly trenches closely grouped together are to be avoided.

The routes forward must be known to and reconnoitred by all. These must be clearly marked.

15. AMMUNITION.

1. Dumping ammunition at the guns must be carefully controlled and regulated.
2. The routes to be used by vehicles carrying up ammunition must be settled beforehand, and arrangements made to prevent congestion of traffic. These arrangements should cover, as far as possible, the situations that are likely to arise after an advance.
3. Ammunition Railheads must be settled, not only for the commencement of operations, but for subsequent stages in view of a move forward

16. SUPPLY.

1. It is advisable to revert, as early as possible, to the normal system if it has been departed from.
2. To reduce traffic during the days of preliminary bombardment it is advisable to establish dumps previously.
3. Advanced supply stores must be established with smaller depots in the front trenches. (See Appendix "C".)
4. It is desirable to have as few railheads as possible, namely one per corps, not per division.
5. Reserve parks must be made up.
6. A reserve can be established on barges, where the canal system admits.
7. Iron Rations should be inspected and must be completed.
8. The probable refilling points for several days ahead should be thought out.

17. WATER.

1. A reconnaissance and marking of all sources of supply is needed. Intelligence will furnish this of country ahead. This water may, however, be contaminated.
2. Forward stores of water will be required. This may necessitate sinking wells in or near the front line.
3. In captured places the water should be tested before drinking. (See para. 22, Police duties.)

18. ADVANCED DEPOTS OF STORES REQUIRED.

The supply of the following must be worked out beforehand and advanced depots will be required :—

- (a) Gun ammunition. (See para. 15.)
- (b) S.A.A.
- (c) Trench mortar ammunition.
- (d) Grenades.
- (e) R.E. Stores (tools, sandbags, wire pickets, etc.).
- (f) Food.
- (g) Water.
- (h) Bridging material.*

The essentials are :—

To have the stores far enough forward in good time so as to reduce traffic during preliminary bombardment to a minimum, and to have the stores readily available when required.

Except for (a) and (h) these depots will be established by Divisions close behind our front system of trenches. (See Appendix "C").

The possibility of a definite advance must be thought out and a proportion of the above must be on wheels.

*NOTE.—This will usually all be on wheels or barges. Improvised bridging material for immediate use, bridging hostile trenches, will, however, be kept in the R.E. advanced depots and with artillery units detailed to advance first.

19. DEPOTS TO BE FORMED IN TRENCHES.

In addition to the Advanced Depots, smaller depots of the following stores will have to be established in the front system of trenches by brigades and battalions (see Appendix "C") :—

- S.A.A.
- Grenades.
- Trench mortar ammunition.
- Tools.
- R.E. Stores.
- Food.
- Water.

Caretakers are required for these stores.

Carrying parties for the more urgent of the above must also be detailed beforehand.

20. COMMUNICATIONS

(Roads, railways, canals).

All communications must be cleared as far forward as possible.

Roads.

Roads must be cleared and repaired up to the front trench, and the places where the roads are cut by trenches must be bridged on all roads for artillery and on main roads to carry M.T.

Paths for reserves.
Routes for mounted troops.

Where necessary, extra roads for all vehicular traffic must be made. In addition, paths with bridges over trenches where necessary should be provided for reserves to come up by.

Routes for mounted troops and artillery must be reconnoitred and prepared up to our front line.

Railways.

Railways should be repaired as far forward as possible and provision should be made for their repair further forward in case of advance.

The use of water transport to bring up stores and for evacuation of wounded in the preliminary stages of the attack requires consideration. Water Transport.

The scheme should include the utilization of water transport forward in the event of an advance.

Extra tramways may be needed for the carrying up of stores. These are very useful for the transport of heavy gas cylinders to the front trench line. Tramways.

Means should be at hand for bridging the enemy's trenches to allow artillery to move forward. Bridging enemy's trenches.

Additional sign posts will be required on all roads. All paths must be clearly marked by sign posts. Sign posts.

Notice boards are required showing the identity of important places such as villages, cross roads, supporting points, etc., corresponding with the map in use.

The provision of road metal in case of a definite advance must be considered. Road metal.

21. ROAD CONTROLS.

(See Notes on Police Duties.)

A carefully worked out system of road control is required, showing up and down routes for the various natures of traffic. The A.P.M. should get early notice of this scheme.

Control posts are then required for all important cross roads, with extra mounted police for patrol duty.

Early notification of intended moves of other troops through Corps areas must be given so that all concerned may be warned.

The allocation of roads in case of an advance must be settled beforehand.

22. POLICE ARRANGEMENTS.

1. The Provost Marshal's scheme should deal with the following points:—

(a) Establishment of posts to prevent straggling. Posts would be established about the general line where communication trenches begin. Regimental police must, however, also be on duty on communication trenches further forward, both to regulate traffic in communication trenches and to prevent straggling. Organization of stragglers into formed bodies.

(b) Traffic control. This includes military traffic, civilian traffic and foot traffic.

This involves the establishment of special control posts by A.P.M. in conjunction with the "Q" Staff, after the routes for the various classes of traffic are fixed (see notes on road controls). Arrangements must be made with the civilian authorities to prevent vehicles using roads required for military purposes. Arrangements must, however, be made for small civilian convoys with food to move under military control. Posts must be established to prevent a rush forward of returning refugees to places captured by us. Civil authorities must assist in preventing the circulation of civilians.

(c) Evacuation of prisoners.

Special arrangements must be made for their collection, accommodation, feeding and dispatch to railheads. Special escorts should be provided so as to release the fighting troops as early as possible.

Care must be taken for prisoners' examination by General Staff, and their immediate searching.

Batches of about 100, with about 15 to 20 per cent for escort, have been proved suitable for dispatch as one party.

(d) Evacuation of civilians in our lines in places required by troops.

This may be necessary, and, if so, has to be arranged for with French authorities.

2. Further considerations for A.P.M.'s in the event of an advance are :—

(a) Arrangements for policing of water that may be contaminated.

(b) Evacuation of civilians from places captured by us.

(c) Protection of property of civilians.

(d) Search for enemy agents left behind.

(e) Consider feeding of destitute civilians left behind by retreating enemy. (Arrange with " Q ").

3. Road control posts and police should be able to direct units and parties and must be acquainted with the local geography.

23. TRANSPORT.

1. Reserve Parks must be re-concentrated.

2. All mechanical vehicles should be inspected and overhauled.

3. All horses unfit to march should be got rid of in time to allow new ones to get hard.

4. All country vehicles should be registered so as to be available when required.

5. Special transport should be organized for the following purposes :—

(a) Buses, lorries, etc. for rapid movement of troops.

(b) Special transport.

i. To carry Lewis guns on long marches.

ii. To bring up packs or greatcoats to troops.

iii. To carry road metal, bridging material, etc.

iv. For collection of stores left behind.

6. The employment of water transport must be considered.

24. RAILWAY ARRANGEMENTS.

1. Railway arrangement must be worked out for any probable tactical move.

2. The increased supplies of ammunition may demand an alteration of Ammunition Railheads.

3. The provision of light railways to supply ammunition to heavy guns and howitzers and of trench tramways for stores to the front line will save roads and may be necessary.

4. Railway arrangements for the evacuation of wounded are required, both as to the location of Ambulance trains and the use of improvised trains for the evacuation of wounded, such as empty supply trains, etc.

5. The repair and utilization of captured railways must be arranged on a definite policy, showing which railways will be repaired first.

25. MEDICAL ARRANGEMENTS.

When active operations are contemplated, the Commander of a formation will take steps to convey to the Administrative Medical

Officers concerned as much of his plan as he feels justified in communicating, bearing in mind that successful medical arrangements depend largely on precise knowledge of the action proposed and close co-operation between Administrative Services and the Staff.

Medical arrangements will proceed on the following lines.

At General Headquarters.

The Director General, after consultation with the Adjutant General and the Quarter Master General, will arrange with the D.M.S., L. of C., for the accommodation of casualties on the scale anticipated in the Stationary and General Hospitals at Bases, these units being, if necessary, cleared by evacuation to Home Territory where this can be carried out without exciting comment or disclosing plans.

He will arrange with the Director of Railway Transport for such railway facilities as will ensure the smooth working of Ambulance Trains and with the Director of Inland Water Transport for the use of Ambulance Flotillas when waterways are available.

He will be prepared to supplement, as far as possible, the arrangements of Medical Services within Formations by holding in reserve spare personnel, vehicles, equipment and medical supplies, so located as to be available without delay, and will, when the information at his disposal indicates that an advance may be expected, make preparations for the sending forward of such additional medical units as may become necessary as a result of the forward progress of the troops.

At Army Headquarters.

The Director of Medical Services will, in consultation with the A. and Q. branches of the staff, make such detailed plans as may be necessary for the collection and evacuation of wounded, the allotment of roads for use by Motor Ambulance Convoys, the Casualty Clearing Stations to which the wounded from the various Corps will be evacuated, and the allotment of personnel for entraining duties at railheads. He will discuss with the A.D.R.T. of the railhead area concerned the details of distribution of Ambulance Trains within that area, and formulate, in consultation with the D.Ds.M.S. of Corps, plans by which co-operation may be obtained between Motor Ambulance Convoys, Clearing Stations and Ambulance trains with a view to avoiding delay of railway traffic.

He will consider arrangements for equipping and staffing improvised ambulance trains or empty supply trains, these arrangements being made in consultation with the D.G.M.S. at G.H.Q. who will normally hold the medical personnel for this purpose in reserve outside the Army area.

He will arrange with D.Ds.M.S. of Corps to what extent they are to control the Motor Ambulance Convoys and Clearing Stations in their areas during the operations contemplated, and will convey through these officers to the A.Ds.M.S. of Divisions as much of the general plan of Medical arrangements as will ensure co-ordination of Medical services at the front.

When an advance is contemplated, he will arrange for certain of his Casualty Clearing Stations to be held in readiness for a move forward and will discuss with the staff the best locations for these units in the area to be occupied. It will usually be possible to carry out these moves by road, the lorries of those Clearing Stations that

are to remain in their positions being used to supplement the transport of those moving forward to new locations.

As it usually happens that the strain of receiving and evacuating wounded falls more heavily on some Medical units than on others, the D.M.S. will, as far as possible, augment the personnel of the units most actively engaged by transfers from other units in his area.

At Corps Headquarters.

The Ds.M.S. of Corps will arrange with the branches of the staff concerned how best to give effect to the general instructions received from the D.M.S. of the Army and for such detailed arrangements as are necessary for the co-ordination of Medical Services within the Corps. They will arrange with the A.Ds.M.S. of Divisions as to the points where wounded will be collected for transfer to Casualty Clearing Stations by the Motor Ambulance Convoys, these points being usually at selected Field Ambulances so placed as to be accessible to road traffic at all times and at which the casualties from Advanced Dressing Stations will be concentrated.

They will see that the D.M.S. of the Army and the officers commanding Motor Ambulance Convoys are kept informed of any changes in these arrangements necessitated by movements of the Corps.

In anticipation of an advance, it may be necessary to hold one or two Field Ambulances or sections of Field Ambulances in reserve ready to move forward, and the question of pooling a certain number of Motor Ambulance vehicles from Field Ambulances for use as a Convoy within the Corps should also receive consideration.

At Divisional Headquarters.

The A.D.M.S. of a Division combines the duties of an Administrative Medical Officer at Divisional Headquarters with those of an Executive Officer in command of a group of three units. When operations are contemplated, he will make all administrative arrangements in consultation with the A. and Q. branches of the staff, and will arrange directly with the G.S. branch as to the working of the Field Ambulances during the action. No detail that would apply to all situations can be drawn up in advance, but the following questions will always require to be considered: Provision of shelter in the form of shell-proof or splinter-proof dug-outs for the wounded at points as close as possible to the fighting line and the location and organisation of Regimental Aid Posts in consultation with the Brigadiers and Regimental Commanding Officers concerned. The provision of special communication trenches for the evacuation of wounded is most desirable where circumstances permit, and the width of a stretcher should be borne in mind when these communication trenches are being made. The A.D.M.S. will ensure that co-operation is maintained between Field Ambulances and Regimental Medical Establishments and that the Advanced Dressing Stations are, when possible, so placed as to be accessible to road transport; that precise instructions as to use of roads by Ambulance vehicles within the Divisional area are drawn up in consultation with the Q. staff and transmitted to all concerned; and that a sufficient reserve in the shape of sub-divisions of Field Ambulances or complete units are held in readiness to cope with any situation that is likely to arise.

Detailed plans for the co-operation of the bearer divisions or

sub-divisions of Field Ambulances with the Regimental Stretcher Bearers will invariably be arranged in advance.

The closest co-operation between the A.D.M.S. of a division with the D.D.M.S. of the Corps is necessary to ensure successful collection and evacuation of wounded.

26. VETERINARY SERVICES.

1. Evacuation of all cases not likely to be fit for duty when advance takes place. This to be carried out in time to get Remounts fit.
2. Completion of Veterinary Equipment.
3. Establishment of Collecting Posts for Mobile Veterinary Sections.
4. Routes for return of casualties to be fixed, arranged by 'Q' in accordance with their scheme for allocation of roads.
5. Provision of parties at Railheads from Receiving Veterinary Hospitals.

27. REMOUNTS.

Location of Field Remount Section.

28. COLLECTION OF STORES.

1. An officer from each division should be detailed to superintend the collection of all stores, equipment, etc. He should be in possession of a map showing the distribution of all billets and the position of all grenade, S.A.A., Ration Stores, etc.
2. Trench Stores.
"Collecting Stations" for stores in each locality and a Divisional Store should be established. Arrangements should be made to requisition carts at short notice for bringing stores to the Divisional Store, or to place them on rail if necessary.
3. Billet Stores.
"Collecting Stations" for stores in each Brigade area and "Central Divisional Stores" should be established. Arrangements should be made for the necessary carts to be requisitioned at short notice for carrying stores to the "Central Divisional Store".
4. The personnel in charge of above stores will probably have to be rationed so as to be self-supporting for some time.
5. Early attention must be paid to reducing stocks of all sorts not required for actual fighting, such as gumboots, special winter clothing, gifts and comforts, officers' kits, etc., etc.

29. CASUALTIES.

Casualties among Commanders or Staff should be filled by the selection of officers from a list previously compiled. This will be arranged by Corps earmarking officers in brigades and divisions for employment. At least one, if not two, Brigadiers should be kept at A.C. H.Q. to replace casualties.

To reduce casualties among officers, only such as are absolutely required should be allowed to go into action. Not more than 20 officers per Battalion.

Divisional Commanders will keep the Adjutant General G.H.Q. constantly informed as regards estimates of casualties in units in accordance with the instructions issued to Army Commanders on the subject.

30. BILLETING SCHEME FOR REINFORCEMENTS.

Schemes should be worked out beforehand so as to be ready to allot billets immediately to a division sent up as a reinforcement.

31. CLEARING BATTLEFIELD.

1. Attention is drawn to extracts from General Routine Orders, Part I, dated 1st December, 1915, page 17.

32. RE-EQUIPPING AFTER HEAVY FIGHTING.

Unit Commanders should at once send statements of stores required to complete.

Ordnance Officers should accept written or telegraphic communications, but ordinary vouchers save time.

Priority must be given to articles affecting fighting efficiency.

APPENDIX A.1.

NOTES ON THE EMPLOYMENT OF GAS AND SMOKE IN THE ATTACK.

General Considerations regarding the Employment of Gas and Smoke.

1. There must be a steady wind of approximately two to eight miles per hour, blowing at an angle of not more than 45 deg. on either side of the perpendicular to our front line. If the velocity of the wind is less, its direction is apt to be variable, and the gas is apt to drift back on our own troops: if the angle of the wind is greater, the gas has too far to travel, and takes too long to reach the German trenches. It is also liable to strike salients in our own trenches.
2. The cylinders are ordinarily placed in groups at 25 yards interval, the number in each group depending on the duration which it is desired to give to the discharge, and on the effect to be produced. Great variety can be introduced into the method of attack. The effect aimed at will depend on tactical considerations and on what is known of the protection with which the enemy is provided.

At the present time probably the best effect would be produced by arranging the discharge so that a heavy concentration of gas is produced at the commencement, before the enemy has had time to adjust his respirators: this might be followed by a continuous less concentrated discharge for 1½ or 2 hours which would have the effect of impairing the efficiency of the respirators and exhausting the enemy by increasing his difficulty in breathing; and the conditions would then be favourable for a final heavy discharge similar to the first.

8. If possible, the gas should be started before daylight, so that the enemy cannot observe the cloud approaching, and to make it more difficult for him to adopt his defensive measures. If the factor of surprise is introduced, it is highly probable that the first two minutes gas will do all that is necessary.

During the night it will be advisable to open occasional bursts of heavy rifle and machine gun fire; the gas should be started during one of those bursts so that the hissing noise made by it when liberated is drowned.

4. Gas on a large scale has been used on three occasions by the First Army—

(a) On the 25th September (on a front of 10,000 yards) when there was a very gentle wind and such drift of the atmosphere as there was came from the south-south-west. At Fosse No. 8, in Loos, and at certain points in the German trenches the gas was effective, and a number of dead were found, their death being caused by the gas. Elsewhere the effect appeared to be more moral than physical. The gas caused some damage to our own troops, and in very few places could all, or even half, of the cylinders be discharged owing to the direction of the wind.

(b) On the 27th September (on a front of 1,200 yards), when insufficient gas was liberated and the weather was showery and squally, the enemy's precautions proved effective and no advance was possible.

(c) On the 18th October.

5. The action of the enemy immediately on perceiving that a gas attack is being launched is to turn all available fire from artillery, machine guns and rifles on to the trenches whence the gas is being emitted.

The ideal action, therefore, on our part is to turn on the gas in the early morning in the darkness, and keep it going through the period of dawn, turning on smoke as soon as it becomes at all light. The assault should then be carried out under cover of smoke about 15 to 30 minutes after dawn.

The drawback to this procedure, however, is that the wind is generally at a low velocity and variable at dawn, and its direction may not be favourable on the day fixed for the assault.

If, on the other hand, for one reason or another, the gas attack has to take place in daylight, then it is necessary to turn on smoke at the same time on as broad a front as possible, and extending far beyond the flanks of the gas attack. The effect of this is to confuse the enemy as to the real point of the attack and prevent him from ascertaining where the gas is being liberated.

The enemy will then disperse his artillery fire along the whole front from which the smoke is proceeding.

6. Smoke is, as shown above, a valuable adjunct to gas, and mixes well with the chlorine gas. It should be allowed to continue for one or two minutes after the gas is expended for the double purpose of—

- (a). Forming an innocuous dense cloud, under cover of which, and in which, the assaulting troops can move forward, and
(b). Denoting the tail end of the gas.

7. Smoke, by itself, is very valuable in the attack for the following reasons—
- (a) It causes the enemy to man his parapets and open fire, since he is uncertain as to when the assault is about to be delivered. The German instructions are to the effect that, on any indication of a gas attack, the parapets are to be manned and no one is to withdraw into the dug-outs.
This is of the highest importance, and affords an opportunity to our field artillery with shrapnel to inflict loss on the enemy and destroy his moral.
 - (b) It prevents the enemy from delivering aimed fire at our assaulting troops and it causes his fire to be high and wild.
 - (c) By means of Stokes mortar bombs, barrages can be made to obscure any important point in the enemy's defences, such as machine-gun emplacements, observing stations etc. These weapons may also be used for creating a curtain of smoke on either flank of an assault.
8. It is possible that, under cover of the smoke, the enemy may attempt to send men forward to throw bombs into our trenches or even make an attack themselves. To guard against this our own rifle and machine gun fire should always be directed through the smoke on to the enemy's parapets, and the smoke candles and grenades should as far as possible be thrown beyond our own wire entanglements.

Staff Arrangements for a Gas and Smoke Attack.

1. The chance of success of the operations depends very largely on a careful and methodical preparation of the front, so that there is no overcrowding of communication and front trenches, so that all materials and special personnel are brought up to the trenches in sufficient time, and so that every man knows his duties thoroughly.
2. The front from which a gas attack is to be delivered should be divided into bays, each bay being 25 yards long. The bays should be numbered from right to left and a Notice Board erected showing the number of each bay.
Each bay should be prepared beforehand for the reception of the cylinders, i.e. the front parapets should be undercut below or under the firing-step, and a wooden framework inserted so that the required number of cylinders can be placed vertically in position (see diagram "A").¹ The top of the cylinder should then be not more than 6' 0" from the top of the parapet, so that the metal tube can be adjusted to point directly over the parapet in the direction of the enemy.
3. Considerable congestion is bound to exist in the front trenches during the night prior to the assault, owing to the presence of assaulting troops, the gas company personnel and the men detailed for working the smoke apparatus. Consequently, if time and other circumstances permit, it may be advisable to construct "T" saps (see diagram "B")¹ in each bay for the cylinders,

¹ Not reproduced.

smoke material, and working personnel, thus leaving the trenches clear for the assaulting troops. This arrangement would also minimize the possibilities of the gas drifting back to our own troops, but see para. 4.

4 Types of emplacements :

- (a) Undercut type, figure (1).¹ This requires considerable labour and a good deal of timber. It is apt to destroy parapets and is difficult, where the interior slope has been revetted. It, however, gives excellent protection to cylinders.
- (b) Fire-step type, figure (2).¹ This is the easiest and quickest made and requires no special materials. Protection from shell-fire is not as good as in type (a).
- (c) " T " saps, diagram " B ".¹ This takes much time and labour and is very liable to attract attention from hostile sentries and from aircraft.

5. The procedure for bringing the cylinders forward into position is as follows (see diagram " C ")¹ :—

- (a) A special train conveys the cylinders to a selected railhead (as far forward as possible but not under shell-fire). Here the gas company should be billeted. If the front is extensive then more than one railhead and more than one gas company is required. One company under the new organization is sufficient for a front of 1,500 yards. This frontage of 1,500 yards requires 1,200 cylinders, i.e. 12 truck loads.
- (b) At railhead the train will be met, the boxes off-loaded and unscrewed and the cylinders removed. Off-loading party must be detailed.
- (c) G.S. wagons (20 cylinders per wagon) or lorries (40 cylinders per lorry) will transfer the cylinders from railhead to two or more divisional dumps. Loading and off-loading parties must be detailed at railheads and divisional dumps. Divisional dumps should be as far forward as wagons and lorries can go, but should be in places as far as possible protected from shell-fire and suitably placed with regard to communication trenches leading forward.
- (d) Carrying parties are required at the divisional dumps. The gas cylinder requires two men to carry it. It is provided with sling and pole for purpose of carrying. If the distance is over a thousand yards then a relief is required. It is, therefore, generally necessary to detail four men per cylinder for carrying purposes.

Carrying parties should be divided into groups thus :—20 cylinders for one bay require 80 men, i.e. one group under an officer, with three or four guides who are well acquainted with the route to their bay.

The front should be divided into sectors of so many bays, each sector being fed by two communication trenches, one for forward traffic and one for rearward traffic.

Poles should be returned to dumps for use on subsequent nights.

¹ Not reproduced.

- (e) The gas company personnel should have previously reconnoitred the front and, in conjunction with the Divisional Staff, have selected the bays (these need not be contiguous, see diagram "C").¹ Before the cylinders arrive in the trenches the gas company personnel should be in the trenches ready to receive them and supervise the placing of them in position.
- (f) An officer of the gas company is placed in charge of so many bays. All watches must be regulated during a considerable period before the attack takes place. A watch is provided for every bay along the line.

Time-tables for the discharge of gas and smoke should be printed and distributed—one to each bay.

- (g) The gas company personnel should be in charge of all the gas and smoke arrangements, and be responsible for the liberation of both gas and smoke according to the time-table. The gas company will have the required number of personnel from the infantry placed at their disposal to assist them in working the smoke apparatus.
6. The following instance is quoted in order to show the requirements of one corps only for arranging gas on a front of 4,500 yards at ten cylinders per bay.

On the front of the IV Corps 3 nights' work was required to convey the cylinders into the trenches. On each of the first two nights 106 G.S. wagons were employed in carrying the cylinders from railhead to the divisional dumps, the time occupied in each case being about two hours. On the third night only 20 G.S. wagons were used.

120 men were employed at railhead transferring the cylinders from trucks to wagons.

The distance from the divisional dumps to the trenches varied from 600 yards to 3,000 yards.

On the first night the time taken to get the cylinders into position varied from 7 to 12 hours, and on the second night from 3½ to 8 hours.

On the first night 3,560 men were employed for carrying cylinders to the trenches; on the second night 3,360 men; and on the third night 900 men.

Had the bays contained 20 cylinders instead of 10 cylinders the numbers of G.S. wagons, loading parties and carrying parties required would either have been doubled or five nights would have been required to carry out the work.

7. The following means are available for employing smoke :—

- (a) "P" Grenades (Red phosphorus).

These are lit by a Bickford fuze and thrown over the parapet by hand. Fusee matches are required for lighting them. If infantry is employed in using them it is important that they should have received training in the method of doing so. They should also be instructed to throw them as far forward as possible, preferably in front of our wire, otherwise the burning phosphorus may be blown back into our trenches

¹ Not reproduced.

by the burst, or it may be splashed back, when lying on the ground, by the enemy's shrapnel fire.

It should be remembered that the burning phosphorus left on the ground by these grenades is a source of danger to men who fall wounded, and during the summer months may also set fire to grass. It is therefore undesirable to use them on fronts over which Infantry are to advance to the assault. The smoke from "P" grenades is, however, so much better than that from candles that it might be advisable to accept the above risk under circumstances when it was essential to give the assaulting columns the most complete cover from view.

The "P" grenade gives on bursting a thick cloud of white smoke. The cloud remains fairly large and dense for about three minutes and then drops to about the volume and density of a Smoke Candle. Smoke continues to discharge for about 15 to 20 minutes altogether.

A good effect may be obtained by throwing the grenades at 12 yards' interval, one every two and a half to three minutes for the maintenance of a dense cloud with a wind of 10-12 miles an hour. With lighter winds the time intervals may be longer. The above would produce a cloud which would conceal our men from the enemy in position 300 yards away until they were close up to them. Gas has no appreciable effect on the density of smoke from "P" grenades.

(b) **Smoke Candles.**

These can be used either in conjunction with gas from cylinders or by themselves. When used by themselves the smoke discharge of two candles per minute every 25 yards (or 5 Candles per yard of front per hour) would even in a fairly high wind, namely 10-12 m.p.h., which is the highest in which they would be effective, conceal infantry getting out of trenches preparatory to the assault, but the latter would become visible from the front after advancing 20 or 30 yards. If it were desired to give infantry partial protection from view up to 200 yards in front of the line of candles double the above number of candles would be required. It would, of course, not be necessary to maintain a cloud of the latter density during the whole period of a gas attack; the lighter discharge first described would suffice till just before the time for assault, when it could be thickened up. This could also be done at one or two periods previously so as not to disclose the intention. With lighter winds a somewhat lower proportion of candles would suffice.

When the candles are used in conjunction with gas from cylinders the smoke cloud, as a result of chemical action, becomes three or four times as effective as when candles are used alone. The number of candles can therefore be reduced to one-third of that given above.

Smoke Candles are of the following types—

- (i) **Triple Candles.** Give a smoke of yellowish brown or yellowish grey colour. Average time of burning two to three minutes. There are several makes of triple candles—

- (a) Pain's, with green label, which are the best.
- (b) Wells', with red label. Not quite such good smoke. The connections between the three candles are sometimes defective, causing one or two sections to remain unburned.
- (c) Pelagus, with yellow label. An inferior kind which should not be relied on. Very few in stock.

There may also be other makes, such as Brock's which are practically similar to (a) and (b).

- (ii) "S" Mixture Candles. These are cylindrical canisters. They give rather denser smoke than the triple candles and last about 3 minutes. The figures given previously for the number of candles required to give a smoke cloud refer to triple candles burning two to three minutes. If "S" mixture candles are used the numbers can be somewhat reduced.
- (c) Smoke bombs from 4" Stokes Mortars.
By projecting smoke bombs from mortars it is possible to produce smoke clouds at times when the wind conditions are not suitable to the use of candles and hand grenades from our front trenches. Particular localities behind the enemy's front line, if within the range of the mortar, can be shrouded in smoke at will.
One of the battalions of the Special Brigade has been carefully trained in the formation of smoke barrages in varying wind conditions and in denying the power of observation to particular sections of the enemy's position.
With the mortars and ammunition at present available a range of 350 yards only is possible. It is hoped that with improved mountings and new ammunition it will be possible to get a range of 600 yards or possibly more.
The amount of ammunition required to produce an effective smoke barrage depends on the direction and velocity of the wind and the distance apart of the guns. If the latter are spaced 25 yards apart it may be said to vary from half a round per gun per minute under the most favourable wind conditions to two rounds per gun per minute under the most unfavourable.

APPENDIX A.2.

SUMMARY OF ORDERS AND INSTRUCTIONS FOR GAS ATTACK ISSUED BY IVTH CORPS.

1. Transport of Cylinders to Trenches.

- (a) 14 Cylinders can be carried on a G.S. wagon.
2 men can carry a cylinder.
- (b) Parties to be detailed :—
 - (i) To unload cylinders at Railhead and load them into wagons.
 - (ii) To unload cylinders from G.S. wagons at dumps.
 - (iii) To carry cylinders from dumps to trenches.

(c) Strength of parties :—

(i) Furnished by Gas Company.

(ii) For unloading cylinders at dump, four men to be detailed per wagon.

Each party under an N.C.O.

(iii) Carrying parties :—The party for each partition to be under an N.C.O.

Each party to have a guide detailed from the company holding the front line trenches in which the partitions are located. Guide to have an arm band with the number of his partition.

Parties to be grouped in fives, each group of five to be under an officer.

c.g., Assuming 7 cylinders have to be carried into each partition on first night, there will be required :—

14 men to carry, plus one guide for each partition.

70 men (5 parties) plus five guides, under an officer.

(d) Wagons move from railhead to the dump in groups of 5.

Divisions to arrange to conduct the wagons to the dumps.

Wheels of wagons to be muffled.

Necessary roads closed to other traffic.

(e) As soon as wagons are unloaded they return to railhead with the empty boxes.

Poles and slings for carrying come with the cylinders.

When done with, poles and slings to be returned by Divisions.

(f) An A.S.C. officer to be detailed to marshal the wagons at railhead.

2. Arrangements in Trenches.

(a) Trenches to be divided into 25 yard partitions, numbered from right to left of each Division.

Cylinders to be placed in recesses under the front parapet. Two recesses in each partition.

Dimensions :—

Height 4'. Depth into parapet 9" or 12".

Length per cylinder 12".

Distance between top of parapet and top of recess 4'-6".

The front of recesses sandbagged up.

(b) Vermorel Sprayers to be charged and ready for use in front trenches when cylinders go in, in case of a leakage or burst.

(c) Divisions to arrange for one pick and one shovel to be available in each partition for use of Gas Company.

3. Gas Company.

(a) Divided as follows :—

1st Div. 5 sections = 5 officers and 150 men.

15th ,, 6 sections = 6 officers and 180 men.

47th ,, 6 sections = 6 officers and 180 men.

- (b) Before loading cylinders into wagons, all screws, except one, to be removed, one screw to be left to keep the lid attached to the box.
- (c) O.C. Gas Co. responsible for :—
 - (i) Distributing cylinders to Divisions at Railhead.
 - (ii) Sending correct number of poles and slings with each group of wagons.
- (d) Officers and N.C.Os of Gas Co. available for supervising arrangement of cylinders in the trenches.
- (e) Section Commanders of Gas Co. to have free use of telephone line for sending messages to A.H.Q. These messages to be treated as "priority".
- (f) Personnel of Gas Co. to be withdrawn from trenches as soon as possible after the infantry assault. They must be careful not to delay the advance of the infantry supports and reserves moving forward.
- (g) Copy of instructions issued by O.C. 187 Company attached.

Summary of work arranged by 187th (Special) Company R.E.

- (1) Provide guard for train at Railhead.
- (2) Unscrew lids of boxes, leaving one screw only.
- (3) Load G.S. wagons with cylinders and necessary poles, etc.
- (4) Send with first group of 5 G.S. wagons a party of 1 Sergt. and 5 N.C.Os to each dump to assist with slinging, etc.
- (5) This party will stand by to receive the poles and slings from the returning fatigue parties. Each Division to send 3 G.S. wagons at 9 A.M. on the mornings of the 19th, 20th, and 21st, to convey these slings to Railhead. The parties will return in these wagons.
- (6) 1 officer and 4 N.C.Os of 187th Company R.E. per Division will be in the trenches to receive the cylinders and to see that they are properly placed and sandbags piled round them.
- (7) A party of 187th Company R.E. will patrol the trenches each day to see that everything is in order. Divisions to make arrangements for maintaining recesses in good order until finally taken over by the 187th Company at the appointed time.
- (8) The 187th Company R.E. will be in position by 8 P.M. on the 24th. Candlemen should report to their various recesses at that hour and will be instructed in the methods of making connections and of lighting the candles.
- (9) A Section Officer or senior N.C.O. of 187th Company R.E. will remain at or near the telephone of each Infantry Company Commander along the front, and will be allowed to use the 'phone as necessity arises.
- (10) The 187th Company R.E. will withdraw to their rendezvous as soon as possible after the conclusion of their work, by routes which will be indicated by Divisions beforehand. Care will be taken not to impede in any way the advance of assaulting troops.

- (11) Divisional R.E. to see that the tops of all parapets are levelled, and that the crest of parapet is not more than 4'-6" from the top of recesses. This is necessary to ensure that the discharge pipes may lie flat.
- (12) All Infantry Vermorel sprayers should be ready charged and in good working order, in the front trenches, if possible near the recesses.

4. Smoke Candles.

- (a) Divisions to furnish men for discharge of smoke candles at the rate of two men per partition. In case of casualties amongst the Gas Co. these men will be available for assisting in the discharge of gas and will receive instructions accordingly.
- (b) Candles to be kept in a dry place.
- (c) Vesuvians to be supplied at the rate of two boxes per candleman.

5. Precautions.

- (a) No food or water found in German trenches to be used.
- (b) Where Russian saps are being constructed, ensure they are free from gas before resuming work.
- (c) All men to wear a gas helmet rolled up ready for lowering in case of necessity.
- (d) Warn R.F.C. to protect yard from hostile aircraft.
- (e) Dug-outs and houses not to be entered without gas helmets.
- (f) Vermorel sprayers to be ready for use. (O.C. 187th Co. reports two per section of 14 batteries were insufficient.)
- (g) Arrangements for rapidly notifying postponement.

6. Time.

- (a) Representatives of Divisions and O.C. Gas Co. given correct time on afternoon preceding gas attack. Again checked during the early morning.
- (b) O.C. Gas Co. to see that the men's watches are synchronized before going into the trenches.

7. Time table of Gas and Smoke.

Gas front.

- | | |
|---------------|---|
| 0 | Start the gas and run 6 cylinders, one after the other, at full blast until all are exhausted.
(6 cylinders) |
| 0-12 to 0-20. | Start the smoke. The smoke is to run concurrently with the gas, if the gas is not exhausted by 0-12.
(4 candles, one at a time, in each partition) |
| 0-20. | Start the gas again and run 6 cylinders, one after the other, at full blast until all are exhausted.
(6 cylinders) |
| 0-32 to 0-40. | Start the smoke again. The smoke is to run concurrently with the gas, if the gas is not exhausted by 0-32.
(4 candles, one at a time, in each partition) |

- 0-38. Turn all gas off punctually.
Thicken up smoke with triple candles, and
Prepare for assault.
(2 candles and 1 triple candle)

0-40. ASSAULT.

Note :—From 0 to 0-40, front system of hostile trenches will be kept under continuous shrapnel fire. Defences further in rear under bombardment of H.E. shell of all calibres.

At 0-40 artillery fire will lift as arranged.

Smoke front.

(no change)

6 minutes gas followed by 34 minutes smoke.

8. Allotment of Cylinders, etc.

1st Division :

	Cylinders.	Candles.	Triple Candles.
72 gas partitions. = 72×12 72 \times 10 plus 80 spare 72 \times 1 plus 1 spare	864	800	73
	864	800	73

15th Division :

83 gas partitions. = 83×12 83 \times 10 plus 70 spare 83 \times 1 plus 1 spare	996	900	84
	996	900	84

47th Division :

50 gas partitions. = 50×12 50 \times 10 50 \times 1	600	500	50
32 smoke partitions. = 32×3 32 \times 34 plus 212 spare 32 \times 1 plus 1 spare	96	1,800	33
	696	1,800	83

9. Phosphor bombs and grenades.

	2" Mortar Bombs.	Stokes Mortar Bombs.	95 m.m. Bombs.	New Phosphor Hand-Grenades.	Threlfelite No. 2.	Phosphor.
1st Division	100	1,000	500	500	1,000	—
15th Division	—	1,000	500	500	1,000	—
47th Division	300	2,000	2,000	500	1,500	400 lbs.
Corps Reserve	200	—	—	—	154	—

APPENDIX A.3.

NOTES IN CONNECTION WITH THE EMPLOYMENT OF GAS
IN THE ATTACK.

1. From the experience gained during the fighting round Ypres it is known that, if proper precautions are taken (i.e., if gas helmets are worn and properly tucked in round the neck) men need have no fear of suffering any ill effects from gas fumes.

On the other hand, experience has shown that, if men are not prepared for a gas attack, and if they are not wearing their gas helmets or have not time to put them on properly, the effect of a sudden cloud of gas may be very great indeed, not only in the front trenches but also in the support and reserve trenches for some considerable distance in rear.

2. There is reason to believe that the Germans have not got an effective smoke helmet and, as we have not yet made use of gas in our attacks, it is likely that its use by us may come as a complete surprise to the enemy.

In these circumstances we must be prepared to take full advantage of the initial surprise, and, in view of the fact that the gas helmets now in the possession of our troops give (however dense the cloud of gas) complete immunity from all ill effects, there is every ground for hoping that, when it comes to close fighting in the gas area, our troops will have a great advantage over those of the enemy who remain to resist our advance.

3. All men in the front trenches must have their smoke helmets on before the gas cylinders are opened.

The troops carrying out the attack are to wear a smoke helmet. This should be worn on the head and tucked in round the back of the neck in such a manner that it can be easily pulled down and adjusted on encountering gas.

The old pattern smoke helmet is quite proof against our own gas and, being lighter, should be worn by the troops carrying out the attack, and the tube helmet carried in the usual way by the man in addition in case of accident. It must be distinctly understood that every man must have a tube helmet with him.

4. Dug-outs and houses cannot be made gas tight. It is not likely, therefore, that the enemy will be able to stay in such places any more than in his front line trenches; and no time should be lost in the advance in waiting to make an immediate and close examination of these places.

The gas, being heavy, is likely to get lodged in low-lying places such as trenches and dug-outs. Although there is no reason why men with their helmets on should not go into these places, it must be remembered that they cannot be permanently occupied until cleared of gas. This must be done by the use of sprayers which must be brought forward. It is calculated that it will take one sprayer to clear each 15 yards of trench. Refills for the sprayers should be carried forward with the troops making the attack.

5. Machine guns should be well oiled before being taken forward into the gas area. This will obviate any chance of the guns jamming on account of gas corrosion.

Adv. First Army,
22nd September, 1915.

R. BUTLER,
Major General,
General Staff, First Army.

APPENDIX B.

BRIDGING ARRANGEMENTS.

In connection with the forthcoming operations which may involve bridging across the La Bassée and Haute Deule canals—

1. The following are the resources available exclusive of such as may be improvised on the spot :—
 - (a) All divisions, with 3 Field Companies, R.E., have sufficient pontoons, trestles, etc., to make 2 or 3 bridges of the medium type, per division, suitable for troops and all horsed vehicles.
 - (b) The 1st Bridging Train (Headquarters at Molinghem) has sufficient bridging material to make 3 or 4 heavy bridges to take A.S.C. heavy motor lorries, should no other means of crossing be available. These bridges would not be suitable for heavy commercial lorries, but might be used by such vehicles on emergency. They would not take heavy guns or steam tractors.
 - (c) At Aire, sufficient materials to make 2 girder bridges, suitable for all traffic except 6" guns, are packed on 4 barges.
 - (d) At the Base, much material is available for bridges of the type mentioned in (c). It is sorted out ready for loading and despatch by train, and could be delivered at any railhead at a few days' notice.
2. The following arrangements will be made :—
 - (a) Field Company bridging material will be used as required by Corps and Divisions.
 - (b) The 1st Bridging Train will be divided as follows :—

1st Corps = 3 sections.
4th Corps = 3 sections.
3rd Corps = 2 sections.

As regards the 1st and 4th Corps, the sections will assemble on the 24th inst. at places to be selected by Corps. Corps to inform Adv. First Army of the places selected.

The two sections now with 3rd Corps will remain with 3rd Corps.

- (c) The 4 barges at present at Aire will be sent to Bethune arriving there on the 24th inst. and placed at the disposal of the 1st and 4th Corps respectively, 2 barges containing materials for 1 bridge being allotted to each Corps.
- (d) G.H.Q. has been requested to send two bridges by rail, one each to Boeuvry and Noeux les Mines, to be placed at the

disposal of 1st and 4th Corps respectively, and to arrive at these railheads on the 24th inst.

These bridges are provided for use before those mentioned in (c) above in view of the probable difficulties of transport by water.

The 1st and 4th Corps will be prepared with arrangements for the conveyance by road of these bridges from railheads.

Probably ten 3 ton lorries making 3 to 4 trips would suffice for the conveyance of one bridge. Probably 4 to 7 days would be required for the completion of the bridge.

Adv. First Army,
15th September, 1915.

R. BUTLER,
Major General,
General Staff, First Army.

APPENDIX C

DIVISIONAL PREPARATIONS

<u>Carried on men.</u>	200-220 rounds of ammunition. Haversack on back. Iron ration and current day's ration. 2-3 sandbags. 2 gas helmets. Proportion of wirecutters, billhooks, and hedging gloves.
<u>1st Division.</u>	100 wirecutters per battalion.
<u>15th Division.</u>	10 wirecutters per platoon in leading brigades. 8 billhooks per platoon in leading brigades.
<u>47th Division.</u>	1 wirecutter and billhook per platoon in leading brigades.
<u>Grenadiers.</u>	Rifle and bayonet. 50 rounds. Bludgeon or knife. 5-12-20 grenades.
<u>S.A.A.</u>	Dumps in support lines—100 rounds per man for 6,000 men (i.e., 2 Bdes.). In 10 Dumps—6,500 rounds per machine gun. Brigade Reserve Dumps. Divisional Reserves { Dumps. On wheels.
<u>47th Division.</u>	50 rounds per man in Brigade Reserve in the trenches.

50 rounds per man in Brigade Reserve in Maroc.
128 boxes in Divisional Reserve at Les Brebis.

Maxim Guns.

16,000 rounds per gun for the 3 Battns.
3,500 rounds with gun.
8,000 rounds in Regtl. Reserve in trenches.
5,000 rounds in Bde. Res. : in Maroc.
128 boxes in Divisional Reserve.
All carefully labelled.
Echelons on wheels full.
In only one case was ammunition sent up on wheels
—44th Brigade to Loos on evening of 25th.
Only one Brigade ran short—2nd Brigade at Puits
14 Bis on evening of 25th.
Expenditure impossible to calculate.

Grenades.

Grenadiers 12-20 each.
1st Division—3,200 per Brigade.
15th Division—4,800 per Brigade.

Dumps in Trenches.

1st Division—4 of 2,000.
15th Division—4 of 720. 3 of 500.
47th Division—1,750.

Brigade or Divisional Dumps.

1st Division	Le Rutoire.
15th Division	4,000 Saulchoy Farm.
47th Division	3,000 Maroc.
	3,400 Fosse 6.

Special parties detailed for carrying forward bombs.

Rations.

1 day for every man in Dumps = 13,500.
1st Division .. Le Rutoire.
15th Division .. Quality Street.
47th Division .. Maroc—Les Brebis.

No difficulties about food.

<u>Water.</u>	<u>1st Division.</u>	100 petrol tins per battalion in trenches. Well in Well Farm. Well at Le Rutoire. Well at Philosophe.
	<u>15th Division.</u>	10 100-gallon tanks in support trenches. Well at Fosse 7. Pipe from Fosse 3 to Lens Road Keep.

47th Division. Petrol tins and canvas carriers. Small cisterns stored full in trenches. 20,000 gallons in tanks at Maroc.

R.E. Stores.

1st Division. Advanced Depots R.E. Stores.
Central Depot in Vermelles.
R.E. Wagons loaded.

15th Division. Two advanced Depots in trenches.
Advanced Depot—Quality Street.
Main Divl. Depot—Saulchoy Farm.
Bridging material on wagons.

47th Division. Small Depots in trenches.
Three Brigade Depots in Maroc.
Mobile Depot on wagons at Les Brebis, with bridging material on 9 wagons.

Contents of Depots :—

Sandbags.
Corrugated Iron Sheets.
Expanded metal.
Billhooks and axes.
Pickets.
Wire—barbed and trench.
Mauls.
Shovels.
Picks.
Crowbars.
Wirecutters.
Tracing Tapes.

Medical.

Regimental Aid Posts.
Advanced Dressing Stations.
Dressing Stations (Fd. Ambulance).
Evacuation Trench.
Evacuated 5,000 wounded.

Bridging of Trenches.

Material prepared and laid where possible behind our lines.
Bridging parties detailed beforehand for this work.

Maps.

1/40,000 and 1/100,000.

Time. Taken from Gas Company. Every man had his watch synchronized evening before and checked night 24th/25th.

Communication. Checked every hour during night: every half hour after 5 A.M.

Machine Gun Batteries.

Three in 47th Division to shoot over heads of troops advancing.

Communication Trenches.

"Ups" and "Downs"—At least one of each per Brigade.

All trenches labelled and arrows showing to what trenches they lead.

Exit from Trenches for the assault.

Sandbags and Pickets.

Our wire cut night previous to assault.

No Orders or papers of value to the enemy to be carried.

SS. 109

TRAINING OF DIVISIONS FOR OFFENSIVE ACTION.

1. The time available for divisions when out of the line to train as divisions is short. It is necessary that the utmost use should be made of it, and that the object of the training should be clearly understood by all concerned.

Success depends on preparations for all the phases of an attack, viz. :—

(a) The organization of our trenches for the assembly of the attacking force ;

(b) The artillery bombardment ;

(c) The crossing of the area between our front trenches and the enemy's ;

(d) The capture of the enemy's defensive systems and artillery positions, and the consolidation against counter-attack of ground won ;

(e) Exploitation of success.

The training ground must be carefully reconnoitred, beforehand, and a detailed programme of the whole period must be prepared. If possible, every brigade should be exercised in each form of training.

2. The training of the division can be conveniently divided into two categories :—

(a) Training for the attack from trenches against a hostile system of trenches and strong points, including the consolidation and occupation of the position won.

(b) Training for exploiting a success when the hostile systems of defence have been broken through.

3. A complete system of hostile trenches and at least the first line of a second system together with the defended localities between these two systems, should be marked out on the hostile ground to full scale from trench maps and aerial photographs, to represent as far as possible an actual system of trenches and strong points. The assault over the area so marked out should be practised several times by the division as a whole ; the division being disposed in depth on a narrow front with two brigades, and also with one brigade in the front line.

A suitable assaulting front for a brigade against a strong objective may be taken at from 400 to 600 yards. The average front of a

division forming part of a larger force in an attack, however, must be governed by the nature of the country to be traversed, the difficulty of the task allotted, the intervals to be allowed between formations, the number of important objectives to be assaulted, and the number of brigades to be employed in the front line. It may be taken at from 1,000 to 1,800 yards, or an average of about 1,500 yards for several divisions in a decisive attack.

4. The attack must aim at continuity and must be driven home without intermission, so that the attack gradually works forward till the endurance of the enemy is broken down.

Every attacking unit must be given a limited and clearly defined objective, which it is to capture and consolidate at all costs; the assaulting columns must go right through above ground to this objective in successive waves or lines, each line adding fresh impetus to the preceding line when this is checked, and carrying the whole forward to the objective. The cleaning up and consolidation of positions passed over by the assaulting columns in their advance, the formation of protective flanks, and the preparation of strong supporting points in the captured area will be carried out by other troops of the attacking force, following the assaulting columns and specially told off for the purpose. Local reserves must be held to reinforce those parts of the line which are checked, to fill gaps opening in the front and to relieve troops which are exhausted and whose endurance has gone.

From the moment when the first line of assaulting troops leaves our front trenches, a continuous forward flow must be maintained from the rear throughout the division. Up to our own front line this flow may be either above or below ground, according to topographical conditions, the nature of the enemy's fire, and the number of communication trenches available, but once the assaulting troops have left our trenches and are pushing on to their objective, their movement will be carried out above ground.

The movement of the Divisional Reserve may be controlled when required by ordering beforehand that its forward flow is to be checked on reaching some definite line (such as our original first line of trenches) in which it will await orders.

5. When a particular line or succession of lines have reached an objective assigned to them, for the consolidation of which preparations have already been made, it will usually be inadvisable to order these troops to push on to a further objective. It follows, therefore, that, to secure continuity in operations on a large scale, it may be necessary to arrange for fresh troops to pass through others.

Occasions may also occur in which there is, beyond the first objective, a second objective, *e.g.*, another system of hostile trenches or centre of resistance, which the Commander of the formation intends to attack, conditionally on the first attack succeeding, with a fresh body of troops, but as part of the same operation.

Divisions must, therefore, be practised in the passing of a fresh body of attacking troops through the troops which have carried out the first assault and have reached their objective. The second attack will be carried out on the same principles, the assaulting columns going straight through to the objective in successive lines.

The passing of one body of troops through another during an attack is, however, an extremely difficult operation, and should only be attempted when there is a reasonable opportunity of seizing and holding the second objective by immediate attack, as for instance when the first attacking force has succeeded in gaining the whole objective it was ordered to consolidate, the artillery preparation on the second objective has been adequate and effective, and the force detailed to attack it is well in hand.

The conditions of every attack vary, however, and a special solution must be found for each individual problem. It depends on whether the furthest objective that has been allotted to a division can be reached in one continuous advance, or whether it is necessary to capture and consolidate some intermediate objective before the final one can be assaulted.

6. With regard to the above, it is impossible to lay down any definite rules as to the strength of assaulting columns, the number of lines of which they consist, or the distance apart of these lines.

The depth of the assaulting column depends on the distance of the objective, and on the opposition that has to be overcome in reaching it. Its strength must be calculated so as to give sufficient driving power to enable the column to reach its objective and to provide sufficient remaining energy to enable the objective to be held when gained. The distance apart of the lines will usually be regulated by the rate at which the successive lines can be formed up and moved forward over the parapet. The men in each line should be extended at two or three paces interval. In this connection it is worthy of consideration that in many instances experience has shown that to capture a hostile trench a single line of men has usually failed, two lines have generally failed but sometimes succeeded, three lines have generally succeeded but sometimes failed, and four or more lines have usually succeeded.

7. In these exercises the attack or part of it should frequently fail to reach its objective, and the commanders of the units thus checked be confronted on the spot with a new situation and practised in making rapid decisions based on the original plan.

Every brigade in turn should be called upon to move from reserve to the capture of an objective, in front of which the assaulting troops have been held up, or against which an attack has failed. The orders for this operation and a description of the artillery support that will be available will be given to Commanders on the spot.

8. Any division may be in reserve to one or more assaulting divisions. Such a task requires as careful previous preparation and study as does the task of the divisions actually detailed for the assault.

The staffs and regimental officers of the division in reserve on any portion of the assaulting front must make themselves familiar by personal reconnaissance with the trench systems over which they may have to operate and with every detail of the ground. They must be provided with the same maps as those used by the assaulting division. The Staffs and higher Commanders of the division in reserve must study the plans and preparations of the assaulting divisions as closely as if they were their own. In this way only will they be able when the time comes to take up the attack without hesitation, and with a clear understanding of the task before them.

From the moment the operation begins, the closest liaison must

be established, in accordance with arrangements made beforehand ; and responsible Staff Officers from the Reserve Division should be attached to the Headquarters of the Divisions in front so as to follow every development of the action. As soon as it is known where the Reserve Division is to be put in, the proper place for the Commander of the Reserve Division and his Staff is at the Battle Headquarters of the Divisional Commander who is controlling the operations in that particular portion of the battlefield.

9. Special exercises should be held during the period of training by Divisional and Brigade Commanders with all their staffs and subordinate commanders—

(a) To consider in detail the preliminary arrangements for an attack on a large scale ; and

(b) To consider the action to be taken by subordinate commanders when local unexpected situations arise, such as occur when a portion of a line is held up, impassable obstacles are encountered, or it becomes necessary to deliver or repel a local counter-attack.

With regard to (a), attention is directed to the memorandum on the preliminary arrangements in case of a large attack, issued with O.B./1207, dated the 2nd February, 1916.¹ The artillery programme and co-operation should be worked out in all exercises and explained to all concerned.

With regard to (b), it must be remembered that officers and troops generally do not now possess that military knowledge arising from a long and high state of training which enables them to act promptly on sound lines in unexpected situations. They have become accustomed to deliberate action based on precise and detailed orders.

Officers and men in action will usually do what they have been practised to do or have been told to do in certain situations, and it is therefore all the more necessary to ensure that a clear understanding should exist among all ranks as to what action is to be taken in the different situations that may arise in battle. In this connection every endeavour should be made to inculcate mutual confidence and the spirit of combination directly towards the achievement of the task set. During an advance under fire men must possess the habit of looking spontaneously to the leaders for direction ; more often than not leaders have to look for and find their men. Even this in itself is not sufficient. Situations will constantly arise when there is no officer or non-commissioned officer present with groups of men, and the men must realize that, in such a case, one man must assume leadership on the spot and the remainder act under his control.

All must be prepared for heavy casualties, and must realize that the magnitude of the interests at stake necessitates the greatest self-sacrifice from one and all.

10. Brigade Headquarters, as well as Battalion Headquarters, must be practised in moving forward during the progress of an attack, and it is essential that communication from front to rear must not be lost. It is, therefore, necessary that the route to be followed by Headquarters should be well defined and known, so that runners both from front and rear will know the route to follow in order to pick up the Headquarters should it be moving. In the case of

¹ Appendix 16.

Brigade and Battalion Headquarters it will usually be inadvisable to state a place to which the Headquarters will move, as that place may be inaccessible or untenable.

A thorough system of good communication throughout the division is of the first importance, and every kind of alternative form of communication from front to rear, including parties of men, under specially selected officers, detailed as runners, must be continually practised throughout every exercise both by day and night. All ranks must be warned of the vital importance of forwarding accurate and speedy information. This portion of the training will receive the special attention of the higher Commanders.

11. With regard to the latter part of paragraph 2 (a), attention is directed to the memorandum on the consolidation of trenches and localities after assault and capture (O.B. 1629, dated 4-5-16) already issued.

12. With regard to the second category of training (paragraph 2 (b)), the general principles laid down in our training manuals hold good, and special attention is directed to Chapters V, VI, VII, and IX, *Field Service Regulations*, Part I. Special exercises should be carried out by divisions to practise the continuation of the advance after a hostile system of defences has been broken through.

Such an advance will probably take the form of a series of attacks on tactical points which are still held by the enemy by portions of the force, whilst other portions continue a vigorous advance.

Special attention should be given during some of these exercises to the methods of establishing a defensive flank to the division as it advances, and in all exercises the general principles of securing the ground gained must be carried out (*see* paragraph 11 above).

13. In all exercises the following points require special study on the part of Brigade and Battalion Commanders :—

(a) The employment of Brigade Machine Gun Companies and Lewis guns, to ensure that full advantage is taken of this great increase in fire power.

In particular, opportunities should be looked for to practise pushing forward Lewis guns to precede the attacking infantry or to reinforce an advance which is held up.

Attention is directed to “Notes on the Use of Lewis Guns in ‘an Advance,’” dated the 18th March, 1916, and “Notes on the ‘Tactical Employment of Machine Guns and Lewis Guns’” (S.S. 106).

(b) The use of bombers (*see* S.S. 398 “Training and Employment of Bombers”).

(c) The use of Trench Mortars.

(d) The arrangements for getting all the above forward as rapidly as possible and keeping them supplied in action.

14. The service of supply, also, alike as regards ammunition, food and water, should be carried out thoroughly in every detail, at least one exercise of this nature being carried out after dark.

15. The following points have proved the chief stumbling blocks to a complete success in past attacks, and every effort must therefore be made to overcome them :—

(a) Failures in mutual support. Every endeavour must be made to maintain lateral communication ; when a gap occurs

in the line, whether caused by the failure of some portion of the force to reach its objective or otherwise, the troops on either side of the gap, who have reached their objective, must at once close the gap by extending inwards, or by pushing into the gap their nearest available reserves, and in this way both re-establish lateral communication and isolate any hostile detachment which is holding out.

The value of machine guns to fill a gap of this kind should be borne in mind.

(b) Failures in passing on information as to the situation. The vital importance of information and the responsibility of everyone in assisting to obtain and forward it must be impressed on all ranks.

(c) Failure to re-organize and to consolidate the ground won in time to resist a counter-attack. Every effort must be made to retain control and cohesion, and every suitable opportunity of reforming must be taken. Consolidation, on the principles laid down in the memorandum referred to in paragraph 11, must be carried out with all speed and determination.

(d) Unnecessary crowding of the assaulting columns, with the consequent increase in casualties and congestion. It must be borne in mind that beyond a certain point the addition of more men merely results in hampering an attack.

(e) Premature using up of reserves. Every commander must make arrangements to retain control of his reserves till they are required for some definite purpose, and must not allow them to drift into the fight piecemeal and with no clear guidance as to their objective.

16. The strictest attention must continue to be paid to the cultivation of the power of command in young officers, also to discipline, dress, saluting, cleanliness and care of billets, and the importance of strict obedience to instructions as regards arrangements for supply, preservation of iron rations, water, etc., must be impressed on all ranks.

Self-denial in the matter of water in particular must be practised; men must accustom themselves to not drinking out of their water-bottles without orders, and control over the men in this respect will be exercised by officers during operations.

Too great stress cannot be laid on developing good moral, a soldierly spirit, and a determination in all ranks to achieve success at all costs.

17. Troops once launched to the attack must push on at all costs till the final objective is reached.

It must be impressed on all ranks that "decisive success in battle can be gained only by a vigorous offensive" (F.S.R. 99.1), and in no operation of war is rapidity and determination more important than in exploiting a success after breaking through a hostile system of defences.

To ensure success it is impossible to exaggerate the vital importance of thorough training of all ranks, so that all may feel convinced that "when we fight we win."

G.H.Q.,
8th May, 1916.

L. E. KIGGELL, Lieut.-General,
C.G.S.

FOURTH ARMY.

TACTICAL NOTES.¹

Introduction.

1. These instructions have been compiled from memoranda and instructions issued by G.H.Q. and Fourth Army H.Q. from time to time. They will form the basis on which all the training of troops in reserve in the Fourth Army during the summer will be carried out.

General Remarks.

2. We must remember that owing to the large expansion of our Army and the heavy casualties in experienced officers, the officers and troops generally do not now possess that military knowledge arising from a long and high state of training which enables them to act instinctively and promptly on sound lines in unexpected situations. They have become accustomed to deliberate action based on precise and detailed orders.

3. Officers and men in action will usually do what they have been practised to do or have been told to do in certain situations, and it is therefore all the more necessary to ensure that a clear understanding should exist among all ranks as to what action is to be taken in the different and unexpected situations that always arise in battle. During an advance under fire men must possess the habit of looking spontaneously to their leaders for direction. Even this in itself is not sufficient. Situations will constantly arise when there is no officer or non-commissioned officer present with groups of men, and the men must realize that, in such a case, one man must assume leadership on the spot and the remainder act under his control.

4. With the above objects in view special exercises should be held during the period of training by Divisional and Brigade Commanders with their staffs and subordinate commanders, to consider the action to be taken by subordinate commanders in local unex-

¹ Two diagrams showing "The general idea of the Scheme of German Defences" were attached. They show three positions and intermediate lines which may be seen on the maps.

pected situations, such as a portion of a line being held up, impassable obstacles encountered, or local counter-attacks by themselves or the enemy.

The artillery programme and co-operation should be worked out in all exercises and explained to all concerned.

Discipline and Moral.

5. It has been rightly said that this war will be won by superior discipline and moral. We undoubtedly started with the disadvantage of pitting an undisciplined nation against a disciplined one ; but this advantage is rapidly disappearing, thanks to the self-sacrifice of the best elements of the nation. This self-sacrifice, however, is not enough to ensure success unless we attain a high standard of military discipline. No opportunity, therefore, must be lost of inculcating discipline into the troops, whether in the trenches, on the march, or in billets.

Things which may appear trivial matters to those who have only lately joined the Army are really of great importance, such as saluting, cleanliness, tidiness in dress, manner when speaking to their superiors, strict observance of orders and instructions, absence of stragglers, etc. All these inculcate a habit of obedience and self-respect. Men must learn to obey by instinct, without thinking, so that in times of stress they will act as they are accustomed to do.

6. We have always prided ourselves, justly, that our officers lead their men into action, and do not drive them. This is the ideal we must endeavour to maintain. It involves not only the strictest discipline, but the respect and confidence of the men in their officers. This respect and confidence can only be gained by officers by devotion to duty, power of command, attention to the men's welfare, constant study of their profession and the art of leadership, and, lastly, by setting an example in all those soldierly qualities that lead to success in war. There is no one more easily influenced for good or bad by the example of his superiors than the British soldier.

Finally, it must be remembered that all criticism by subordinates of their superiors, and of orders received from superior authority, will in the end recoil on the heads of the critics and undermine their authority with those below them.

THE OFFENSIVE.

Selection of Objectives.

7. The general scheme of the enemy's defences is shown in the attached diagram. The form these defences take necessitates their being divided up for the purpose of an attack amongst formations both laterally and in depth.

The frontage allotted to each formation depends on the nature of their defences, the lie of the ground, and the available amount of artillery support and of other accessories to offensive action.

8. As regards depth, we may take it as an axiom that the extent of the advance of the troops *in one operation* is limited by two factors :—

- (1) The ground that can be covered by the artillery.

This we may take as the effective range of heavy howitzers, assuming it is possible to move forward our field artillery during the operation. This range will be 5,000-6,000 yards beyond our front line, allowing for the howitzers being 2,000-3,000 yards behind this line.

- (2) The limit of endurance of the attacking troops.

As regards this we must, of course, base our calculations on the limit of endurance of the troops who have the greatest distance to go.

9. Under present conditions the limit of the artillery will sometimes include the second line system of trenches, but not the third line. This second line should usually also be within the limit of endurance of the troops.

The objectives to be attacked, speaking generally and eliminating the third line system for the reasons given above, divide themselves naturally into three well-defined divisions—the front line system, the intermediate line, and the second line system.

As a first principle the first objective should not be short of the furthest limit of the enemy's front line system, and may include the intermediate line if within reasonable distance.

The second objective should include the intermediate line and all ground which will give us good observation over such part of the second line system as is not clearly visible from our present front.

The third objective, the second line system.

General Form of Attack.

10. If successive objectives at some distance behind each other have to be captured, *experience shows that each body of troops must be given a definite objective to attack and consolidate.* This objective, as already pointed out, must be clearly defined both as regards frontage and depth. When the first body of troops has gained its objective then the next should pass through it and in turn attack and consolidate its objective, and so on till the most distant objective has been reached.

11. This method may possibly cause slight delay between the attacks of the successive objectives and thus lose to some extent the benefit of taking immediate advantage of the enemy's disorganisation and loss of moral. It obviates, however, that confusion and lack of control that is bound to occur when one body of troops is given too distant an objective, and reaches it in an exhausted and somewhat disordered condition, and is in consequence unable to resist a counter-attack successfully. The passing of one body of troops through another is, however, a difficult operation, and requires very careful preparation and constant practice in drill beforehand, as well as complete control on the part of all leaders, and discipline in the troops when the hour comes to carry it out.

Form of Attack by Each Body of Troops on its Particular Objective.

12. Each body of troops, in order to carry out its task of capturing and consolidating its particular objective, as allotted in accord-

ance with the principles laid down in paras. 9 and 10, must be very carefully organised beforehand. Every man must know exactly what is expected of him, and every leader must see that his men act as ordered. The procedure to be adopted in sub-allotting objectives to the successive attacking lines of one body of troops must be different to that laid down in the preceding paragraphs for the general form of attack of the enemy's defences as a whole. In this case celerity of movement and the necessity of taking immediate and full advantage of the stunning effects on the enemy's moral and physical powers are essentially the governing factors. The leading lines, therefore, should carry right through to the farthest limits of the objective. The assaulting troops must push forward at a steady pace in successive lines, each line adding fresh impetus to the preceding line. Although a steady pace for the assaulting troops is recommended, occasions may arise where the rapid advance of some lightly-equipped men on some particular part of the enemy's defences may turn the scale.

13. Each body will find its own supports and reserves. Supports will be required for filling up the gaps in the front lines and carrying on the forward movement, should the leading assaulting lines not prove sufficient, the protection of flanks and consolidation of captured positions. Reserves will be required to meet the unforeseen and to further protect the flanks of the attack, and to assist in the consolidation of the captured position.

14. Every body of troops will be given such a proportion of machine guns, Stokes mortars, bombers, pioneers, and R.E. as its task may demand.

15. All assaulting troops must advance irrespective of what the troops are doing on their flanks, but they must take proper steps to guard their exposed flanks, and higher commanders must, as regards supports and reserves, act in accordance with paras. 13, 29, 30 and 34.

16. Each line of assaulting troops must leave its trenches simultaneously and make the assault as one man. This is of the highest importance.

The best Formation for Attack.

17. There can be no definite rules as regards the best formation for attack. The most suitable formation must depend on :—

- (1) The ground.
- (2) The distance and nature of objective.

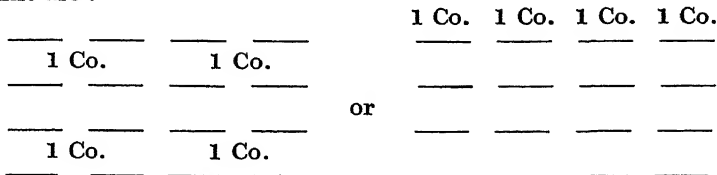
For an objective of considerable depth with several lines of resistance, more depth will be required than with an objective consisting of only one line of resistance.

This point will have to be carefully considered when allotting frontages to bodies of troops.

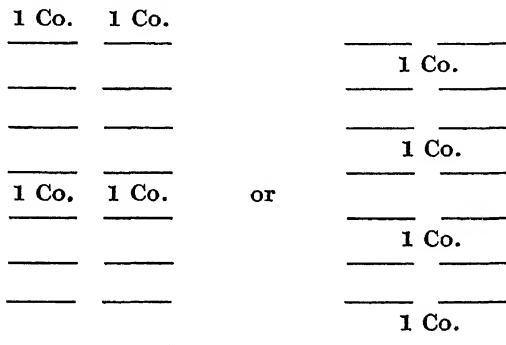
18. There are, however, two main principles to remember when deciding on the formation in which to attack :—

- (1) The value of depth so as to ensure that there will be no unnecessary intermixture of units when the supports and reserves are pushed up.
- (2) The importance of retaining control by battalion and company commanders until the last possible moment.

Probably the two best formations for a battalion if conditions permit are :—



or if still greater depth is required on account of the number of lines of resistance to be attacked :—



The frontage allotted to each battalion being correspondingly decreased.

Distances between Lines and Extension.

19. As a rule, there is a tendency firstly to make each successive line of attack too thick, and secondly to allow the lines of attack to follow too closely one on the other. The temptation is often to try and carry a position by weight of numbers, when very frequently good control and direction, after careful preliminary study of the ground to be traversed would effect the object with fewer men. On the other hand, of course, it is of vital importance that the first one or two lines should be sufficiently strong to ensure the first blow being successful, otherwise the whole attack will be held up. In this connection it is worthy of consideration that, in many instances, experience has shown that to capture a trench a single line has usually failed; two lines have sometimes failed, but sometimes succeeded; three lines have generally succeeded, but sometimes failed; and four or more lines have usually succeeded.

20. The distance apart of the assaulting lines of men will usually be regulated by the rate at which the successive lines can be brought up and moved forward over the parapet. As a general guide, the leading lines should not be more than 100 yards apart.

21. Further, experience shows that, if the front line can be captured, the probability is that the second and third lines in the front system will fall comparatively easily, which means that the

succeeding lines of men need neither be so thick as the leading ones, nor come too close on their heels.

The men in each line should be extended at two or three paces interval.

22. Every effort must be made to prevent the supports and reserves getting intermixed with the firing line too early in the attack. This is a question of discipline and leading.

23. Units must not be deployed sooner than is necessary. Once deployed control becomes much more difficult. Small columns, which can make full use of the folds of the ground to cover their advance, are preferable during the preliminary stages of the advance.

24. In telling off supports and reserves, the question of the protection of flanks must never be lost sight of.

General Principles as regards the Employment of Reserves.

25. Experience has emphasised certain general principles regarding the employment of reserves, the ignoring of which leads to failure :—

- (1) Reserves must be so placed that they can follow up directly the assault is launched.
- (2) Reserves, just as much as any other part of the forces undertaking the offensive, must know exactly what is expected of them. Commanders of reserves must have studied the ground over which they are to work, if possible by personal inspection, in any case on the map.
- (3) Once an attack has been checked it is seldom helped forward by large numbers of supporting troops being pushed up directly behind it.
- (4) Under existing conditions only one definite offensive blow can be expected from one body of infantry in one operation.

26. As regards (1) the reasons are obvious, but this principle is so important that it will bear emphasising. In war the human factor is all important and must never be lost sight of. There is a limit to human endurance in battle and once that limit is reached the reaction is very severe.

27. British troops can be relied on to go forward with the greatest bravery and dash, in spite of the severest losses, up to a certain point. That point depends on the discipline and moral of the unit, but, however high these are, there comes a time when human nature becomes too strong for discipline and violent reaction ensues. Once that point is reached and passed it is hard, if not impossible, to recover the impetus of success. For this reason it is essential that the reserves should arrive before the breaking point is reached and the reaction has commenced. Skobeloff once said that—"The art of command in war lies in having fresh troops available on the spot ready to be thrown into the battle the moment that those already engaged show signs of wavering."

28. To attain this, however, it is not necessary that reserve troops should be crowded into a confined space in immediate proximity to the front line. This will only lead to heavy casualties. What is required is that each body of troops as it leaves its position of readi-

ness should be succeeded in that position without undue delay by the next body. From the moment when the first line of assaulting troops leaves our front trenches, a continuous forward flow must be maintained from the rear throughout the formation. Up to our own front line this flow may be either above or below ground according to topographical conditions and the nature of the enemy's fire. Once the assaulting troops have left our trenches, and are pushing on to their objectives, their movement should be carried out above ground.

29. As regards (3), in case of a check ultimate success is more likely to be obtained by pushing resolutely forward on the flanks of the troops which have been checked.

30. The handling and control of reserves requires careful consideration and constant practice by commanders beforehand, so that they may be able to make rapid decisions as to how these reserves should be employed in order to maintain the forward flow of reinforcements, and ensure their arrival in time to meet the varied situations that may arise.

31. As regards (4), troops heavily engaged during the day should not ordinarily be expected to continue the offensive on the following day, but should be either actually relieved or arrangements made for fresh troops to pass through and take up the offensive role.

The organisation of reserves in depth should be made with this object.

The Attack of Defended Localities, such as Woods and Villages.

32. There are, broadly speaking, two methods of attacking these.

(1) By direct assault.

(2) By overlapping and surrounding them.

Each has its merits ; both are difficult operations and require careful preparation, a high state of discipline, leadership, and training.

33. Experience in the past teaches us certain axioms on which to base our decisions as to which form of attack to adopt.

(a) Troops, which directly assault a village or a wood, invariably get into confusion and out of control, and must be reorganised before they can make a further effort as a formed body.

(b) Unless there is a panic in the enemy's ranks progress through either a village or a wood, which has been turned into a defended locality, will be very slow.

(c) A body of troops, when it discovers that both its flanks are turned and its retreat is threatened, is very liable to become disheartened and surrender.

(d) A deadly form of attack against a village or a wood, especially the latter, is the lacrymatory shell. If, however, such form of attack is adopted it will be found difficult for the attacking troops to advance through the village or wood owing to the fumes of the lacrymatory gas.

(e) The offensive action of the defenders of these localities can be entirely neutralized by heavy bombardments of H.E. shells, smoke, and lacrymatory projectiles, combined with

a shrapnel barrage on the outskirts, and troops can advance on either side of the locality with little loss or interference.

- (f) To complete the neutralization, the attention of defenders of the front of the locality facing our lines must be held by an infantry attack, either by the fire or direct assault of a limited number of men.

Bearing these axioms in mind each situation must be dealt with on its merits. There can be no rules governing our action in such cases.

The Protection of Flanks.

34. The value of a defensive flank has been exemplified time after time. This defensive flank applies not only to large formations but right down to platoons.

Every unit or formation however small must, in drawing up its plan for an attack, make careful previous arrangements for the protection of the flanks of the attack. In the smaller units this may be done by blocking the trenches down which the enemy's bombers will probably counter-attack and by telling off parties to "clean up" communication trenches on the flanks of the advance. The defensive flank, in the case of a larger formation should form a continuation of our line, so that each new advance may oppose an unbroken front to the enemy's counter-attacks.

The choice of a defensive flank requires tactical knowledge and training which, as pointed out in previous paragraphs, can only be attained by constant practice and study of the use of the ground.

Keeping Direction.

35. When attacking on a wide front, the question of each body of troops keeping its direction is an important one. In undulating country such as that in which we are operating, this is by no means easy. Clearly marked objects such as church spires or chimneys are ideal for giving direction, but they are the exception and other arrangements must be made.

- (1) Schemes of attack should be simple and involve as few changes of direction as possible.
- (2) Compass bearings should be made full use of.
- (3) The ground should be previously studied from vantage points in our lines so as to note every little object that may assist, such as copses, houses, trees, etc.
- (4) Commanders must ensure that the assaulting lines advance square with their objective in the first assault. The troops should get out of their trenches and form on some previously arranged line. If no natural feature is available, a tape laid out during the night previous to the assault will be of great assistance.

Consolidation of Trenches and Localities after Assault and Capture.

36. Consolidation of a captured system of trenches.

The capture of a system of hostile trenches is an easy matter compared with the difficulty of retaining it. A thorough knowledge

of the principles, a careful study and correct use of the natural features of the ground, and a detailed preparation and organization of the work are necessary ; but success will only result if there is also an absolute determination on the part of all ranks to get the work done promptly and to defend the position captured at all costs.

37. The principles of the consolidation of captured trenches are, briefly, as follows :—

- (a) To establish a series of strong points or centres of resistance, wired all round and mutually supporting each other according to the ground. These points should be provided with machine or Lewis guns at once. The position of these strong points should be determined beforehand.
- (b) To provide good communication to the rear from these points.
- (c) To arrange for artillery fire to protect the front and flanks of these points.
- (d) To fill in all hostile trenches within bombing distance of the points occupied.
- (e) To establish, if possible simultaneously with the consolidation of strong points in the front line, a number of supporting points in rear. These points should, if the ground is favourable, be placed to cover the intervals between the works in the front line.
- (f) The strong points can later be connected to form a continuous line.

38. The above principles must be applied with due regard to the natural tactical features of the ground. The size and trace of the "strong points," as well as the intervals between them, will vary according to the lie of the ground and the plan of the hostile trenches captured.

These strong points should not be too large ; they should be suitable for one or two platoons. During the process of consolidation concealment from artillery observation is of importance.

39. The first essential is speed in rendering the captured position strong enough to resist the first counter-attacks. It is therefore necessary that a definite plan should be decided on beforehand as to which points first require attention. This can be done, in the majority of cases, with great accuracy from maps and aeroplane photographs, and from a study of the ground from any point in our lines which commands a view of it.

40. Preliminary preparations should include :—

- (a) The provision of material such as sandbags, wire, etc., also for providing working parties with tools.
- (b) The telling off previously of special parties for improving the defences, reversing parapets, and putting up obstacles.
- (c) The provision and allotment of machine guns and Lewis guns.
- (d) The distribution of R.E. parties. Each body of troops destined to secure the ground gained should, if possible, be allotted a proportion of R.E., but it is inadvisable to divide up R.E. Companies into smaller units than sections.
- (e) Practice in laying out a work quickly on the ground and in detailing working parties.

41. Assaulting troops should be relieved as soon as possible by fresh troops in good order and well-disciplined. This must not be taken to imply that the duty of securing ground gained is the task only of the relieving troops. It is an unsound principle for troops to expect to be relieved immediately after an attack, as it wastes valuable time at a critical period when speed in work is essential. It must be understood that troops which take up a position must commence the work of consolidation at once, and continue it without intermission unless, and until, relieved.

Garrisons must hold on to their ground ; they have nothing to fear from being outflanked.

Consolidation of Localities.

42. During an advance, when it becomes necessary to consolidate some locality of tactical importance such as a village or a wood, the same general principles hold good as in the consolidation of a system of trenches. Some notes on the particular points that require attention in the case of villages and woods are appended.

Villages.

43. Enlargements from even small scale maps and aerial photographs give very accurate plans of most villages, and make it possible to plan the defence in sufficient detail beforehand. It is essential that subordinate commanders should be provided with such plans or photographs in order that the general idea of the defence may be quickly and properly understood.

44. The order of urgency of work is as follows :—

- (a) Barricade and piquet all exits. Establish centre of resistance near exits to cover approaches or any streams or tracks which might serve to guide a counter-attack. Commence work on keep. Barricade roads.
- (b) Reconnoitre for cellars.
- (c) Establish communications, giving cover from view, radiating from keep to outer centres of resistance, and from keep to the rear.
- (d) Construct bomb proofs in cellars at centres of resistance and keeps, false roofs to cellars, etc.
- (e) Complete keep.
- (f) Improve communications at (c) above, to give cover from fire.
- (g) Make lateral lines of communication between centres of resistance.

45. Centres of resistance should be established (if it is possible to do so) to the flank of conspicuous buildings likely to afford good targets for hostile artillery fire.

Woods.

46. As in the case of villages, plans should be prepared of the locality.

There has been much discussion in the past as to what part of a

wood should be occupied. Experience has proved that, owing to the great advantages afforded by cover from view, the position to take up in a wood is just so far within the outer edge as will permit of good view into the open. In this connection it should be remembered that in the course of time shell and rifle fire thins out the edges of woods considerably. It is therefore advantageous in the first instance to take up positions slightly in rear of those which may appear at the moment to be most advantageous.

47. If, as is often the case, the wood is surrounded by a hedge there is a natural tendency to make trenches against this hedge. This is to be avoided. A hedge forms a very good obstacle against assault with the addition of a little wire. If it screens the view it can be quickly thinned.

48. The order or urgency of work is as follows :—

- (a) Establish centres of resistance for all-round defence at the corners and salients of the wood. These are the points which are most liable to counter-attack. Establish central reserve, reconnoitre, blaze and clear communications.

The defence of a wood should be very active, and counter-attacks must be launched against any hostile troops that may reach the edge of the wood, in order to prevent a lodgment that places the enemy on equal terms.

- (b) Establish intermediate centres of resistance and lateral communications.
- (c) Establish central keep at junction of rides, or on near edge of clearing.

49. In the case of large woods and forests, where the general line of defence runs through the wood, a line of strong centres of resistance should be established across the wood ; if possible, behind a road or other clearing. The near edge of the clearing should be entangled, and the intervals between the "centres" should be swept by fire. As time permits "rays" should be cleared, radiating from the centres of resistance and crossing similar "rays" from adjoining centres, so as to add to the depth of the field of fire.

These "rays" should be wired and obstacles arranged so as to break up an attack and force the attackers into the openings.

A line of intermediate centres, communications, etc., should also be established as indicated in (b) above.

Employment of Machine and Lewis Guns.

50. The different characteristics of the two types of automatic firing weapons must be thoroughly appreciated before the tactical handling can be rightly determined.

- (a) The Lewis gun is an automatic rifle, very light, easily carried, does not require a fixed platform or carriage to obtain accuracy of fire, is capable of very rapid fire for short periods, but having no artificial cooling apparatus is not capable of sustained fire ; it is now part of the company organization.
- (b) The Machine gun (Maxim or Vickers) is nearly double the weight of a Lewis gun, comparatively heavy to carry and

conspicuous when being carried, owing to its weight, shape and mechanism requires a fixed tripod or platform to fire from, is capable of slightly less rapid fire than the Lewis gun, is capable of sustained fire owing to the barrel being water cooled, it is now part of the brigade, and not battalion, organization.

From the above it may be seen that the two most essential differences are that the Lewis gun is the more mobile weapon, while the Machine gun is capable of more sustained fire.

51. Many instances have been brought to notice in which our infantry assault has been arrested by the fire of hostile machine guns, which have escaped the previous bombardment. Even if accurately located, it has been found very difficult to bring sufficiently accurate artillery fire to bear on them, and so knock them out.

52. The Lewis gun, owing to its lightness and invisibility, may provide the solution of this problem. It is suggested that Lewis gunners, either under cover of darkness, smoke, or artillery bombardment, may be able to creep out into No Man's Land and establish themselves in advance of our assaulting troops in saps, shell holes, ditches, crops, long grass, etc. From these positions, where it will be difficult for them to be detected, they will be able to fire on enemy emplacements, loopholes, and parapets generally, and so assist the infantry to advance.

The detachments so pushed forward should be given instructions as to their particular rôle, which is to cover the advance of their assaulting troops from advanced positions, and they should not open fire unless the situation demands.

53. During the assault, which will probably not take place at every point along the whole front of attack, a proportion of the machine guns of the brigade should be told off to fire on the portions of the enemy's lines on the flanks of the points of assault, thereby assisting the assaulting troops by preventing the enemy employing flank fire. From the same positions they may also be able to enfilade the enemy's trenches in front of the attacking troops until the actual moment of assault. Subsequently they may be able to assist squads, bombing along the enemy's trenches to the flank, to join up with the next point of assault.

54. Some machine guns may also be usefully employed to search the enemy's communication trenches by means of overhead fire from the rear. Even if the material effect is not great (as long range fire will generally have to be used to ensure safety to our troops) the moral effect may be considerable, and the question of ammunition supply need not be considered, as a special dump of ammunition can be provided beforehand for this purpose.

55. On reaching the objective, the task of the infantry is two-fold, namely, to resist counter-attacks and to consolidate the positions won.

Owing to casualties, and the general confusion incidental to an assault, the organization of the defence during the period of consolidation often presents difficulties. During this period the Lewis gun should be able to play an important part owing to its great fire power, thereby releasing infantry for work on the positions.

56. During the period of consolidation blocks in the enemy's communication trenches will be made by special parties told off for the purpose and Lewis guns may be employed to assist. This assistance may be given in two ways, either by working in the trench with the blocking party or by covering the front of the block with fire from the rear. Each has its advantages and disadvantages; if the Lewis gun works actually with the blocking party, its liberty of action is very restricted, it may want to fire to the front and also to each flank at the same time, its field of fire is very restricted, and the gun and team are liable to be bombed out and rushed by the enemy. Covering the head of the block from a position in the main trench by cross fire gives greater liberty of action to the gun, which can cover the trench itself at the same time. The moment a Lewis gun is tied down to a certain spot it loses the greatest of its characteristics, namely, that it is a weapon of opportunity and should be used as such.

57. While the position won is being consolidated and protected by Lewis guns, special parties should be told off to site and build machine gun emplacements. As regards the siting, considerable assistance can be obtained from the previous careful examination of air photos and maps.

58. As soon as the trench is captured and is being consolidated machine guns, which have been kept in hand under the Brigadier, should be sent forward to take over the machine gun defence of the line, and those which have been employed for flanking and overhead fire withdrawn into reserve or for such other purpose as may be required.

As soon as the machine guns are in position, the Lewis guns will become a mobile reserve of fire power to supplement that of the machine gun or to move forward with their companies.

59. The tactical training of all Lewis gun detachments and machine gun companies should be carried out with the above principles of tactical handling in view. In addition, technical training on the lines laid down in the handbooks must be continued in order to obtain a large reserve of Lewis gunners to replace casualties. Every officer and N.C.O. in a battalion should be taught how to handle and fire a Lewis gun, so as to be able to do so in action should necessity arise.

60. Technical proficiency of Lewis and machine gun officers is essential, but in addition they must have tactical training if they are to be capable of seizing the opportunities that will arise, and getting full value out of their weapons. This can only be achieved by constant practice and careful instruction.

Attention is drawn to the "Notes on the Tactical Employment of Machine Guns and Lewis Guns," S.S. 106, issued by G.H.Q., March, 1916.

Employment of Stokes Mortars.

61. The Stokes Mortar Batteries now form part of the brigade organization just as much as do the machine gun companies, and all plans of attack should be based on this principle.

62. These mortars possess the following valuable qualities :—

- (1) Mobility.
- (2) Rapidity of fire.

- (3) Very violent local destructive effect, especially against buildings and trenches.
- (4) A very high trajectory and steep angle of descent, which enables the infantry to advance with absolute safety inside their barrage.
- (5) The effect of the shell is very local ; that is to say, the radius of danger of the explosion in the open is small. This enables the infantry to follow close on the barrage made.
- (6) The flight of their projectiles when in the air is plainly visible, so that infantry can crawl forward and be ready to deliver an assault before the enemy can recover from the moral effect of a series of violent explosions.

These qualities render them a most efficient auxiliary to an infantry advance, and the fullest use should be made of them.

63. When drawing up plans for their employment each situation must be dealt with on its merits, but they should be mainly used to :—

- (1) Form a barrage on the enemy's front and support trenches immediately prior to the assault, so that the infantry can leave their trenches and get quite close to the hostile position prior to delivering the assault.
- (2) To accompany each body of attacking troops and, in combination with Lewis guns and machine guns, to deal with any portion of the hostile defence that is holding up the infantry advance.

64. The question of the supply of ammunition for the mortars accompanying the attacking troops is very important, and requires careful drill and preparation.

The effect of these mortars will probably be so great, if plentifully supplied with ammunition, that it will be worth while sacrificing rifles to ensure that there are plenty of men carrying up ammunition for the mortars as they advance.

65. A regular chain of supply should be arranged, as is done with the S.A.A., grenades and Lewis gun ammunition. In order to enable the infantry to become fully conversant with and to have full confidence in these weapons all battalions should be present at a demonstration where live ammunition is used.

Co-operation of Artillery with Infantry.

66. The ideal is for the artillery to keep their fire immediately in front of the infantry as the latter advances, battering down all opposition with a hurricane of projectiles.

The difficulties of observation, especially in view of dust and smoke, the varying rates of the advance of the infantry, the varieties of obstacles and resistance to be overcome, the probable interruption of telephone communication between infantry and artillery and between the artillery observers and their guns, renders this ideal very difficult to obtain.

67. Experience has shown that the only safe method of artillery support during an advance is a fixed time-table of lifts to which both the infantry and artillery must rigidly conform.

This time-table must be regulated by the rate at which it is calculated the infantry can reach their successive objectives. In drawing up this time-table the inclination in the past has usually been to over-estimate the pace at which the infantry can advance.

68. It must be borne in mind that it is better for the infantry to wait in front of an objective for a short time till the artillery lifts, thus keeping up an intense fire till the last moment, than it is for the artillery fire to be so far ahead of the infantry that the defenders have time to recover from its effect before the infantry assault can be delivered.

69. When the artillery make their lifts they must arrange that there is no cessation of, or diminution in, the violence of the artillery fire. If the lift is a long one it should be carried out by stages, as it will thus protect the infantry advance more effectively, especially in view of the cloud of smoke and dust that it will cause.

70. No changes must be made in the time-tables by subordinate formations without reference to Corps Headquarters or confusion is sure to ensue. If divisions or brigades depart from the programme and call the artillery fire back because part of the line is held up it means that either the neighbouring bodies of troops who have not been held up will probably come under the fire of their own artillery or at least will be held up by it. Generally speaking the best method to break down the resistance is for the lifts to go on as arranged and for the bodies on each flank to push on, thus taking off the pressure from the front of the troops held up, leaving fronts which are still holding out to be dealt with by Stokes mortars and machine or Lewis guns.

71. Should, however, it be considered advisable by the Corps Commander to bring the lift back *ample previous warning must be sent to all concerned* and the programme readjusted to meet the altered situation. In this case very definite rules must be laid down as regards the length of this re-bombardment, which should be definitely fixed beforehand and communicated to all infantry and artillery commanders.

The last few minutes of this re-bombardment should be intense, so as to give the infantry further warning as to when it is about to cease. It should end suddenly and the infantry must be prepared to assault the moment it ceases.

72. This re-bombardment is difficult to arrange and should not be resorted to if it can be avoided and especially until the last lift of the programme has been reached.

73. One of the most important but at the same time difficult tasks is to ensure effective support of the infantry against counter-attacks when their objectives have been attained.

This requires most careful previous arrangement.

Position of Brigade Headquarters.

74. The guiding principle is that the Commander of an Infantry Brigade should be where he can best control such reserves as he has at his disposal and such artillery as is affiliated to him or placed under his orders for tactical purposes.

75. Personal influence on the battlefield can, generally speaking, be seldom brought to bear under modern conditions, and it is by timely use of his reserves and artillery that a Commander can influence an action. So long, therefore, as he can control these reserves so as to put them into the fight at the right time and the right place, and is in the closest touch with his artillery, the fact that he is near or far from the firing line is of comparatively small importance. Should all his own reserves have been expended the situation is somewhat changed, but even then it is essential for every Commander to endeavour to keep touch with his immediate superior so as to keep him informed of his needs in the way of reinforcements.

76. Brigade Headquarters, as well as Battalion Headquarters, must be prepared to move forward during the progress of an attack, and it is essential that communication from front to rear should not be lost. With this in view it is necessary that the route to be followed by H.Q. should be well-defined and known so that runners from front to rear will know the route to follow in order to guide up the H.Q. should it be moving.

In the case of Brigade H.Q. it will usually be inadvisable to state a place to which the H.Q. will move, as that place may be inaccessible or untenable.

Inter-Communication.

77. As many forms of inter-communication as possible must be prepared beforehand to supplement cable communication, both by the infantry and artillery.

Signallers for visual signalling and runners must be trained by all units.

78. In order to further supplement the above means of inter-communication, certain arrangements have been made by the R.F.C. for transmitting such information.

Aeroplanes.

79. Aeroplanes will be told off on each Corps front as contact patrols. They will fly low and close behind the line they are watching, they have special markings, and carry signalling lamps. They will fire a white light as a signal "Where are you?"

80. These contact patrol observers must have an intimate knowledge of the ground in their zone: they must be acquainted with the situation and the position of all Battalion and Brigade Headquarters so far as known. They must be specially trained to watch the movement of troops on the ground, and to receive signals from positions gained by the infantry as they advance.

They will transmit their information to Corps Headquarters by either dropping messages and sketches, or by wireless.

81. The infantry will arrange for companies in front line to communicate with the contact patrol aeroplanes by means of coloured flares or mirrors.

Simplicity is of the greatest importance, and these signals will indicate only "We are here." They must only be made by the leading troops, otherwise the value of the signal will be diminished as an

indication to the artillery as to what points the infantry advance has reached. This must be impressed on all ranks during training.

The signals may be given by the infantry :—

- (1) On the initiative of Company, Platoon, or Section Commanders when it is desired to make their position known.
- (2) On the signal from their own aeroplane "Where are you?"
- (3) At certain fixed hours, should it be possible to lay these down definitely in orders beforehand.
- (4) On reaching a previously arranged position.

82. In addition to the above, Brigade Headquarters, and in favourable circumstances, Battalion Headquarters, will put down ground sheets when the contact patrol aeroplane is present. They will communicate with the aeroplane by lamp or ground signalling sheet. In favourable circumstances ordinary messages may be sent in this way, but ordinarily only a simple code will be used, *e.g.* :—

"I am here"—Battalion and Brigade station call repeated several times.

Also a limited number of code letters to convey important messages.

These signals will be answered by lamp from the air.

Balloon Communication.

83. Lamp signalling communication will also be established by day, and more particularly by night, between Infantry Brigade Headquarters and the Corps Kite Balloon.

The balloon will transmit by telephone.

84. The above communication with aeroplanes needs careful practice, and for this purpose special aeroplanes and observers have been told off for the contact patrol work in each Corps Squadron R.F.C. They are always at the disposal of their Corps for practice in this work. An officer of the R.F.C. should be present with the infantry to point out the characteristics and marks of their own contact patrol aeroplane, and to show when the observer is best able to see. Every battalion should practise this inter-communication *constantly*.

Conclusion.

85. The principles laid down in Training Manuals in peace have stood the test of war, but various causes, such as modern inventions and the numbers engaged on each side, have very materially changed, and will continue to change, the form that modern warfare takes.

This being so we must profit by our experience to adapt the principles of war to the new conditions as they develop.

The instructions contained in the preceding paragraphs are based on our experiences and those of the French up to the present time, and the Army Commander feels certain that a careful study of them will assist officers and men of the Fourth Army to deal successfully with the task that is before us.

H.Q., FOURTH ARMY,
May, 1916.

THE FOURTH ARTILLERY PROGRAMME OF

No map was attached to the record copy. The green, brown and the Fourth Army mentioned in the operation order for the battle (see

Map 1. 1) Montauban—Pozières—Serre with a strong defensive flank on the on the maps and sketches for 1st July).

2) Defensive flank extended from Grandcourt to Martinpuich, and

3) Bazentin le Grand—Ginchy plateau.

The "thick black lines" representing the stages of attack to the with one and two dots, respectively.

PROGRAMME OF PRE

Tasks.	"U" Day.	"V" Day.	"W" Day.
Wire Cutting.	All Day.	All day.	All day.
Bombardment— Trench system, Fortified localities and strong points, O.P.s. and Machine Gun emplacements, water supply, etc.	No increase beyond the normal except for registration.	All day and at intervals during the night by all natures of Howitzers. Concentrated bombardment for 1 hour 20 minutes from 3 P.M. to 4.20 P.M.	All day by all natures of Howitzers. Concentrated bombardment for 1 hour 20 minutes from 3 A.M. to 5.20 A.M.
Bombardment—billetts.	No increase beyond the normal except for registration.	Concentrations of fire and intermittent fire.	As for "V" day.
Shelling of— Communications, approaches, railways, working parties, etc. with the object of preventing replenishment of ammunition, food and water.	All night.	All night. By day as required.	As for "V" day.
Counter Battery work.	Very active.	Very active.	Very active.
Villages, strong points, etc. by 240 mm. Mortars.	No increase beyond the normal.	As required.	As required.
Wire cutting and bombardment of front line trenches by 2" Medium Mortars.	As required for wire cutting.	As for "U" day.	As for "U" day.
Front line trenches and Machine Gun emplacements by 3" Stokes Mortars.	No increase beyond the normal.	As required.	As required.
The establishment of smoke barrages by 4" Stokes Mortars. (Smoke.)	..	..	..
To lead enemy to believe that an assault is about to be made and induce him to man his front trenches. "P" bombs and candles.	..	As required with the gas discharge if it takes place on this night.	As required with the gas discharge if it takes place on this night.
Flammenwerfer to burn out hostile trenches when within range.	..	..	..
GAS. To inflict loss on enemy by taking him by surprise at night.	..	On night V/W if wind is favourable, i.e. W. or S.W. as per programme. Hour to be notified by A.H.Q. to Corps by 5 P.M.	If wind is favourable and discharge was not possible on night V/W. Hour to be notified by 5 P.M.

NOTE 1.—At Zero on "Z" day the Artillery will lift off the front trenches and the Infantry
2.—Our trenches during "U"—"Y" days to be kept as empty as possible especially
3.—Villages in which our troops are usually billeted should be kept as empty as

SOMME

ARMY

PRELIMINARY BOMBARDMENT

purple lines are roughly defined by the "three successive tasks" of Text, Chapter XII.) :

Grandcourt—Serre ridge (shown by a chain dotted line with three dots line advanced eastward to Montauban—Martinpuich.

"green line" are shown on the maps and sketches by chain dotted lines,

LIMINARY BOMBARDMENT

5th June, 1916.

"X" Day.	"Y" Day.	"Z" Day.	General Instructions.
All day.	All day.		
All day by all natures of Howitzers. Concentrated bombardment for 1 hour 20 minutes from 3.30 A.M. to 4.50 A.M., and again from 5.30 P.M. to 6.50 P.M.	All day by all natures of Howitzers. Concentrated bombardment for 1 hour 20 minutes from 5 A.M. to 6.20 A.M., and again from 3 P.M. to 4.20 P.M.	Concentrated bombardment—65 to Zero. Subsequently as per Corps Artillery programme.	Arrangements should be made for Heavy Howitzers to cease firing during a certain period every day in order to permit of photography, verification of fire and examination of equipment. The pause for photography should not be previous to the concentrated bombardment. The enemy system of water mains should be destroyed as soon as possible.
As for "V" day.	As for "V" day.	From -65 under constant fire.	By day and night. (a) Sudden concentrations of fire, e.g. for a few minutes, 10 to 15 minutes subsequent to discharge of gas. (b) Intermittent bursts of fire on billets and approaches, especially at night.
As for "V" day.	As for "V" day.	From -65 under constant fire.	Demands co-operation of Field Artillery, machine guns and rifles on an inner zone and that of Heavy Artillery and long-range guns on an outer zone.
Very active.	Very active.	Concentration of gas shells on hostile gun positions before the assault. Very active.	Special batteries detailed for the destruction of hostile artillery personnel and material and the neutralization of fire in conjunction with aircraft.
As required.	As required.	Concentrated bombardment—65 to Zero. Subsequently as per Corps Artillery programme.	..
As for "U" day.	As for "U" day.	As per Corps Artillery programme.	..
As required.	As required.	Hurricane bombardment of front line system from -8 including ranging rounds.	Care must be taken that detachments are kept fresh for "Z" day, and that guns and personnel are not knocked out by too free a use of these mortars on previous days.
..	..	As required for flank barrage.	..
As required with the gas discharge if it takes place on this night.	1 hour smoke commencing at 6.30 A.M. all along the line if direction of wind permits.	..	To be accompanied by heavy shrapnel barrage on front line trenches, searching of communication trenches and heavy bombardment of reserve billets and communications.
..	..	As required commencing at -10.	..
As per "W" day.	As per "W" day.	..	PROGRAMME— 4 cylinders WHITE STAR simultaneous per bay 0 to 4. 1 cylinder RED STAR per bay every 10 minutes 4 to 1.55. 4 cylinders WHITE STAR per bay 1.55 to 2.0. To be accompanied by heavy shrapnel barrage on front line trenches, searching of communication trenches and heavy bombardment of reserve billets and communications. The noise of the initial discharge to be covered by rapid fire of rifles and machine guns all along the line.

will deliver the assault The hour of Zero will be notified to Corps on "W" or "X" day.
during the discharge of gas and smoke
possible and troops bivouacked in the open if weather is suitable.

THE SOMME

FOURTH ARMY MEMORANDUM OF 28TH JUNE 1916 WITH REGARD TO ACTION TO BE TAKEN IF THE ENEMY'S RESISTANCE BREAKS DOWN.

Map 1A. 1. It has been decided that if the enemy's resistance breaks down during the first phase of the operations the nearest available infantry will be pushed forward in advance of the cavalry, so that no time may be lost in pushing forward troops after an initial success.

2. This does not involve any change in the disposition of troops at Zero on "Z" day, or in the general plan, but necessitates the III and X Corps being ready to push their reserve divisions forward as soon as it is ascertained that the enemy's resistance is broken down.

The Cavalry of the Reserve Army will remain in their places of assembly until these Divisions have moved forward and cleared the line of advance for the Cavalry.

3. The Reserve Divisions of the above Corps will be directed as follows :—

X Corps (49th) on Pys and Irlès.
III Corps (19th) on Le Sars.

On passing the hostile second line the above two Divisions will come under the command of the G.O.C. Reserve Army, whose H.Q. will be established at Albert immediately the advance is ordered by the Fourth Army.

The X and III Corps will continue to administer their two Reserve Divisions.

4. During their advance the flanks of the Reserve Divisions of the III and X Corps must be adequately guarded, and, in order to assist in this, the XV Corps will hold its Reserve Division in readiness to advance on the right of the Reserve Division of the III Corps.

It should be directed on Bazentin-le-Petit and High Wood, and, assisted by the remainder of the XV Corps and by the XIII Corps, will protect the right flank of the advancing troops of the Reserve Army.

5. The VIII Corps will assist in the protection of the left flank of the Reserve Division of the X Corps by the seizure of Miraumont and the Serre—Beauregard Dovecote Spur.

6. III and X Corps will be ready to advance the remainder of their troops in support of their Reserve Divisions as soon as the necessary preparations can be made.

7. When the orders for the advance of the Cavalry from their positions of assembly are issued by the Reserve Army, the Cavalry will have precedence on the following roads, for their forward movement as far as the Green line :—

- (1) Bresle—Lavieville—Millencourt—Bouzincourt—Aveluy—Ovillers—Courcellette.
- (2) Bonnay—road junction C.26.d.90—Albert—Pozières.
- (3) Buire— $\left\{ \begin{array}{l} \text{Dernacourt—Vivier Mill} \\ \text{Ville Sur Ancre—} \end{array} \right\}$ Meaulte—
Becordel Becourt—Becourt—Sausage Valley.

The orders for the advance of the Cavalry must not be given by the Reserve Army until it has been ascertained that the above roads have been made practicable through, and beyond, our present trenches as far as the Green line.

8. G.O.C. Reserve Army will detail 1 Squadron from the Cavalry under his command to be attached to each of the Reserve Divisions of III, X, and XV Corps. These squadrons to join the Divisions to which they will be attached by 5 p.m. on the 30th June—

Headquarters 49th Division. Senlis.

Headquarters 19th Division. Millencourt.

Headquarters 17th Division. Treux.

9. Acknowledge by wire.

A. A. MONTGOMERY,
Major General,
General Staff, Fourth Army.

H.Q., Fourth Army.
28th June, 1916.

THE SOMME, 1ST JULY 1916

XIII CORPS.

PLAN OF OPERATIONS.

PART I.

Objectives of the Fourth Army.

Maps 5, 1.
1A.
Sketch
18.

The general intentions of the Army Commander for the operations are shown on the attached map, Appendix A.¹

(a) The green line shows the final objective to be secured in the First Phase.

(b) The brown line shows the furthest limits it is intended to reach during the Second Phase.

(c) The purple line shows the general scope of the Third Phase.

The 1st objective of the French XX Corps on our right flank is shown by the green line.

Method of securing the objective allotted to the XIII Corps for the First Phase.

2. The attack will be carried out in 4 stages :—²

First Stage—The capture of the line shown on map as “ Inf. Line 0.20.”

Second Stage—Advancing the flanks of this line by the capture of the lines shown as “ Inf. Line 1.0.”

Third Stage—The capture of the line shown as “ Inf. Line 2.30.”

Fourth Stage—The continuance of the offensive by the 30th Division to secure the line shown as “ Final Objective.”

These operations will be extended and completed as described in para. 4 below.

¹ Not reproduced. The phases here denoted by coloured lines are defined in Chapter XIII. of the Text.

² The stages are given separately in the Text, Chapter XIII., for each division.

The boundaries between divisions and brigades and the assembly areas of brigades are shown on the Infantry Map (Appendix A).

The lifts of the Heavy Artillery in covering the advance are shown on the Artillery Map (Appendix B).¹

The tasks of the XIII Corps in the Second and Third Phases.

3. During the Second Phase the XIII Corps will render all possible assistance to the XV Corps in their advance to the brown line, especially with artillery fire—
- (i) By holding on at all costs to the line gained and forming a defensive flank facing Eastwards in conjunction with the French XX Corps on our right.
 - (ii) By placing as much artillery as possible in positions from which it can enfilade the German defences which will be attacked during the Second Phase.

The operations in the Third Phase will involve a change of direction to the right and entail the employment of fresh troops from the Reserve. A fourth division will be at the disposal of the Corps for this phase. It will be carried out in close co-operation with the French XX Corps on our right.

Method of completing success in the First Phase.

4. Immediately the green line, the final objective of the First Phase, has been gained the following measures will be taken to prepare the way for the Second and Third Phases:—
- (a) Detachments of infantry and machine guns will be pushed forward at once to secure the Briqueterie and points from which the Bernafay Wood—Caterpillar Wood Valley can be effectively commanded and the escape of the enemy's guns prevented.
 - (b) Points of vantage beyond the main position from which it will be possible to obtain artillery observation during the subsequent phases of the battle will be seized and secured.
 - (c) Guns or sections of field artillery will be advanced in close support of these detachments.
 - (d) Certain batteries of field artillery (about 2 brigades in all) will be advanced to positions from which they can more effectively cover the ground between our new front and the German 2nd line.
 - (e) The siege and heavy artillery will be advanced to positions from which they can more effectively deal with the German 2nd line, especially about Bazentin-le-Grand and to the N.W. of that place, and those German batteries which have been forced to retire their positions.

In the above special attention is to be paid to establishing a strong barrage both of artillery and machine gun fire between Bernafay Wood and Montauban and to the N. of Montauban to deal with probable counter attacks on the Montauban salient.

¹ Not reproduced. The lifts are given in the Text, Chapter XIII.

As regards (a) above, the necessary lift of Heavy Artillery fire off the Briqueterie will be arranged by Corps Headquarters on the application of the G.O.C. 30th Division.

- (f) In the 18th Division parties previously told off will be held in readiness to raid Caterpillar Wood with the object of capturing or destroying enemy guns. The necessary lift of Heavy Artillery fire will be arranged by Corps Headquarters on the application of G.O.C. 18th Division.

Boundaries.

5. The dividing line between the XIII Corps and the French XX Corps for the first phase of the operations is the Maricourt—Briqueterie road (inclusive to the French) as far as A.10.d.2.6 thence to A.10.b.75.80 : that between the XIII Corps and the XV Corps is trench F.12/2 (inclusive to XIII Corps)—junction of trenches F.12.a.5.8 (inclusive to XIII Corps)—F.6.a.54.10 (inclusive to XV Corps)—F.6.a.8.9—thence the track running N.N.E. through S.25.d. and b as far as junction of tracks at S.25.d.4.9 thence to point S.25.b.37.83.

The boundary between divisions is the Talus Boisé tram line as far as A.3.c.8.6, thence the road due North to Montauban, thence Northwards to the trench running from S.27.c.8.6 to S.27.a.7.2 (inclusive to 30th Division).

The boundaries for counter-battery work are shown on Artillery Map.¹

General form of attack.

6. The Corps will attack with two divisions in line, the 30th Division on the right and the 18th on the left, and one division, the 9th, in reserve.

The 30th Division will attack with 2 brigades leading and 1 in support. The 18th Division will attack with all 3 brigades in line.

The 9th Division, Corps Cavalry Regiment (less detachments), Corps Cyclist Battalion (less 2 companies) and Corps Motor Machine Gun Battery will form the Corps Reserve under Major-General W. T. Furse, C.B., D.S.O., Commanding 9th Division.

7. The objectives allotted to divisions are as follows, each will be consolidated as soon as gained.

The general method of consolidation will be—

Firstly the formation of strong points along the line gained and opening up communications to them from the rear :

Secondly—connecting these points by a continuous line of trenches.

(a) First (nearest) objectives.

30th Division.

Trench from road (exclusive) in A.10.b.75.80 to A.4.c.29.90—A.3.d.72.74 to the tram line at A.3.c.8.6.

¹ Not reproduced.

As a support to above and subsidiary to it the consolidation of the following strong points :—

- (a) in the German 1st line system near the Briqueterie road, A.10.d.
- (b) near German's Wood.
- (c) junction of trenches at A.3.d.7.2.

18th Division.

From tram line at A.3.c.8.6 to trench connecting A.3.c.10.75 with A.2.d.75.90—pt. 6159—Pommiers Redoubt—junction of trenches at F.6.a.70.10.

As a support to the above and subsidiary to it the consolidation of the following strong points :—

- (a) junction of trenches at A.9.a.30.95
- (b) junction of trenches at A.2.d.05.25
- (c) junction of trenches at A.1.d.8.3
- (d) junction of trenches at F.6.c.85.45
- (e) junction of trenches at F.6.c.68.07.

(b) Second (further) objectives.

30th Division.

A.4.c.29.90—Montauban, including enclosures, and the trench running parallel to the village from about S.27.b.5.5 to trench junction at S.27.a.7.2.

18th Division.

Western corner of Montauban as far E. as divisional boundary, thence Westwards to trench junction at S.27.c.1.7, and along trench to junction of trenches at S.26.d.7.6, thence Northwards along trench to about S.26.b.5.4, thence Westwards along the spur through S.26.a.8.3 and S.26.a.2.2, thence to join up with right of 7th Division near S.25.b.3.0. At latter point a strong point is to be constructed immediately it is gained : the 7th Division will construct 4 strong points to the West of this and to the South of the crest of the ridge, roughly along the line S.25.b.3.0 to about X.29.d.9.10 (between S.25.b. and d. and between X.30.a. and c.).

In rear of this line, the trench from Montauban through S.26.d. and c. (Montauban Alley) to Pommiers Redoubt will be consolidated.

NOTE: Divisional Commanders will report to Corps Headquarters any other strong points which they intend to consolidate in addition to those ordered by Corps Headquarters as above.

Preliminary Movements.

8. The days preliminary to the assault, which will take place on "Z" day, have been designated by the corresponding letters of the alphabet.

After "U" day all movements of troops E. of the Bois des Celestins will be under cover of darkness unless compelled to be otherwise by the tactical situation.

During "U", "Y" days our trenches are to be kept as empty as possible especially during the discharge of gas and smoke.

The moves into the forward area will be as already notified in the Table issued with 225 (G).¹

By the morning of "Z" day the Corps will be disposed as follows :—

All infantry of 18th and 30th Divisions N. of the Peronne road.

All batteries in their battle positions.

Wagon lines of all artillery in the Bois des Tailles : teams required for the batteries which move forward during the battle will be moved up into Grovetown or Billon Wood Valley under arrangements to be made by G.O.C., R.A. and Divisional Commanders.

Corps Reserve.

"A" Brigade 9th Division in Copse Valley, Billon Wood Valley and Trigger Wood Valley.

"B" Brigade 9th Division in Grovetown.

"C" Brigade 9th Division in Grovetown or Bois des Celestins.

Corps Cavalry (less detachments) in the Bois des Celestins.
Motor Machine Gun Battery
Cyclist Battalion (less 2 companies) } at Vaux.

Movements of the Corps Reserve.

9. Should any unit of the Corps Reserve be moved forward from its preliminary position of assembly the next unit in rear will automatically move forward and take its place, and so on in succession.

The G.O.C. 9th Division will arrange that the various routes forward from Copse Valley, Billon Wood Valley and Trigger Wood Valley are reconnoitred by officers of the 9th Division so as to ensure rapidity of movement of troops of the Reserve to any portion of the Corps front.

Preliminary Artillery Bombardment.

10. The preliminary bombardment during the period from "U" to "Y" days (both inclusive) will be carried out according to the orders issued by the Fourth Army.

The Divisional Artillery will co-operate in this bombardment and will carry out the necessary wire cutting, their tasks being co-ordinated by the G.O.C., R.A., who will command the whole of the artillery of the Corps.

Special attention is to be paid to effective night firing during this period to prevent as far as possible all movement in rear of the enemy's front trenches, of reliefs, guns, ammunition, food, water, etc.

Infantry, machine guns and trench mortars will co-operate in this task and in keeping open the wire cut.

During the period of preliminary bombardment Divisional Commanders will make use of all methods they can think of to

¹ Not reproduced.

deceive the enemy as to the day and hour of the actual assault, to cause him loss and to wear him down : one of the objects aimed at in a lengthened preliminary bombardment is the physical and moral exhaustion of the enemy ; all alarms which will cause him to man his parapets and there be subjected to fire will further this object. Smoke may be of use in this connection.

During this period photographs from aeroplanes will be taken daily, if weather permits, to photograph the damage done to the enemy's defences : the bombardment will be stopped for this purpose under orders which will be issued daily by Corps Headquarters.

Artillery support during and after the attack.

11. (a) There will be a concentrated bombardment of all natures of artillery from - 65 to 0 on the day of assault : at 0 all artillery will lift from the German front line trench.

(b) The subsequent bombardment by the Corps Heavy Artillery will conform to the barrage lines shown on Artillery Map, Appendix B.

The Corps Heavy Artillery			
will have no guns firing on the enemy front	}		
line trench or within 150 yards of it			after 0.0.
will have no guns firing on or S. of the dotted blue line ¹			after 0.5.
" " " " red line			after 0.15.
" " " " green line			after 0.55.
" " " " black line			after 2.00.
" " " " blue line			after 2.25.
" " " " yellow line			after 2.30.

The broad red line represents the Southern boundary of the final barrage which commences on the lift from the blue line at 2.25 except as regards the portion (marked A B) N. of the yellow line which commences on the lift from the yellow line at 2.30.

NOTE : the breaks shown on the map in the different lines must be taken as approximate distances only : in no case will the Heavy Artillery take a target within 200 yards of positions to be occupied by our troops.

(c) Lifts of Divisional Artillery are at the discretion of Divisional Commanders but so arranged as to fit in generally with those of the Corps Artillery : they are not to be later than the times given at any point where their fire can possibly interfere with a neighbouring unit.

(d) The advance of the infantry will be covered by a heavy barrage from all natures of guns and mortars.

The heavy artillery barrage will lift direct from one line on to the next. The field artillery barrage will creep back by short lifts. Both will work strictly according to time table. The lifts have been timed so as to allow the infantry plenty of time for the advance from one objective to the next, on the principle that it is preferable that the infantry should wait for the barrage to

¹ The references are to the Artillery Map, not reproduced.

lift than that the latter should lift prematurely and thus allow the enemy to man his parapets.

The infantry will follow as close behind the barrage as safety admits.

(e) After attainment of the final objective the 30th Division will push forward a brigade of 18 pdrs. and the 18th Division one 4-5" howitzer battery and three 18 pdr. batteries in accordance with paragraph 4 (d).

These batteries will be moved forward into positions already prepared for them in the valley running Eastwards from Carnoy.

(f) From 0.0 on "Z" day certain batteries of Divisional Artillery, including some 4-5" howitzers, will be told off in each division for the special purpose of dealing immediately with any strong points which hold up the attack; these batteries will be independent of the remainder of the artillery and will not work to the Time Table after the hour of assault.

Each division will be in direct communication with one Heavy Artillery Group (30th Division with the 31st Heavy Artillery Group, 18th Division with the 33rd Heavy Artillery Group).

During the attack the Divisional Commander will call direct on the Heavy Artillery Group Commander for special assistance required should any part of his line be held up: on getting this call the Heavy Artillery Group Commander will at once turn on as many heavy howitzer batteries as the situation demands.

Whenever during the advance troops are checked and a renewed bombardment on the points holding them up becomes necessary this bombardment will invariably be carried out for 30 minutes, the last 5 of which will be as intense as possible: on conclusion of the bombardment the infantry will at once renew the attack.

Artillery available for the attack.

12. The artillery which it is believed will be at the disposal of the Corps, and the grouping of the Corps Artillery, is given below:—

ARTILLERY OF THE XIII CORPS.

Brigadier General R. St. C. LECKY.

30TH DIVISION

(RIGHT DIVISION).

Brigadier General WHITE.

Field Artillery.	{	Arty. of 30th Divn.	{	12 Batteries of 18 pdrs.
			{	3 " " 4-5" Hows.
		Arty. of 9th Divn.	{	6 Batteries of 18 pdrs.
		(not yet arrived)	{	1 Battery of 4-5" Hows.
Trench Mortars.	}	3 or 4 Batteries of 2" Mortars.		

18TH DIVISION

(LEFT DIVISION).

Brigadier General METCALFE.

Field Artillery.	{	Arty. of 18th Divn.	{	12 Batteries of 18 pdrs.
			{	8 " " 4.5" Hows.
		Arty. of 9th Divn.	{	6 Batteries of 18 pdrs.
		(not yet arrived)	{	1 Battery of 4.5" Hows.
Trench Mortars.	}	4 or 5 Batteries of 2" Mortars.		

XIII CORPS HEAVY ARTILLERY.Brigadier General L. W. P. EAST.29TH HEAVY ARTILLERY GROUP

(Counter Battery).

Lieut. Colonel CHAPMAN.

4 Batteries of 60 pdrs. (12, 31, 115, 124).
 1 Battery of 4.7" guns (1/1 Lances).
 1 Battery of 4.5" Hows. (D/50).

31ST HEAVY ARTILLERY GROUP

(Heavy Howitzers).

Lieut. Colonel JENNER.

1 Battery of 2.12" Hows. (85.S.)
 1 Battery of 9.2" Hows.
 1 Battery of 8" Hows. (25.S.)
 2 Batteries of 6" Hows. (15.S., 9.S.)

33RD HEAVY ARTILLERY GROUP

(Heavy Howitzers).

Lieut. Colonel HUTCHINSON.

1 Battery of 9.2" Hows.
 4 Batteries of 6" Hows. (28.S.)

2—6" Guns (Distant Barrage Group).

1 Group of 4 Batteries 220 mm. French Mortars
 (French Artillery Group) (41, 42, 71, 72).

Trench Mortars.

13. Heavy and Medium Trench Mortars will be employed under orders of Divisional Commanders, their action being co-ordinated by the G.O.C., R.A.

3" Stokes Mortars form part of infantry brigades.

The hurricane bombardment by 3" Stokes Mortars for 8 minutes immediately preceding the hour of assault on "Z" day will consist of concentrated fire at known or suspected machine gun emplacements and other special points selected by Divisional Commanders. They are not to be employed in dispersed fire

along portions of enemy trench line. The same principles will be observed by Stokes Mortars during the preliminary bombardment.

Covering fire from rifles and machine guns.

14. Special arrangements will be made in each division to cover every stage of the further advance of the infantry by machine gun fire, indirect where necessary.

Rifle fire from the enemy's trenches during the advance will be kept down by fire from Vickers and Lewis guns, firing enfilade as far as possible, otherwise by using overhead fire.

Gas cylinders.

15. Gas cylinders will be installed at suitable points along the front of the 18th Division and, if time permits, of 30th Division also.

The gas will be discharged on this Corps front only in winds between S. and S.W. (both inclusive).

The discharge will take place only on orders from Corps Headquarters under instructions which are being issued separately.

The discharge will be followed after a suitable interval by heavy shrapnel barrage, searching of communication trenches and heavy bombardment of reserve billets and communications.

The noise of the initial discharge will be covered by rapid fire from rifles and machine guns all along the line.

Smoke.

16. Smoke will be used if the wind is favourable as follows :—

- (a) If desired, with the discharge of gas when ordered.
- (b) All along the line for $\frac{1}{2}$ hour commencing at 7.20 A.M. on "Y" day.

The object being to lead the enemy to believe that an assault is about to be made and to induce him to man his front trenches, the discharge will be followed by heavy shrapnel barrage on front line trenches, searching of communication trenches and heavy bombardment of reserve billets and communications: trench mortars, Vickers and Lewis guns will co-operate with the artillery.

- (c) During the actual attack an attempt will be made to throw a smoke cloud over the Briqueterie to cover the advance from the Inf. 1.0 line and blind any machine guns not disposed of by the bombardment.

If the wind is favourable a similar attempt may be made to throw a smoke cloud over Montauban to cover the advance on that village, and smoke may also be useful during the actual assault of the village.

The smoke will be produced by candles, P bombs and possibly 4" Stokes Mortars.

Flame Projectors.

17. A certain number of the non-portable type, if available, will

be installed at selected points at the end of Russian saps : on the 30th Division front 4, on the 18th Division front 4.

The saps will be opened out a few minutes before the assault and the machines used against the front and support trenches within range of these points.

The Carnoy craters will be dealt with in this way.

Use will also be made of any portable flame projectors which are available ; 16 have been asked for for the Corps front.

Special Patrols.

18. After the commencement of the bombardment special patrols will be sent out daily, under cover of darkness or smoke where necessary, to ascertain the damage done by our artillery fire. It will be the business of the infantry to find out what wire has or has not been cut in their front and to report thereon to the artillery : wire uncut by artillery or trench mortars must be dealt with by hand under cover of the bombardment before the hour of assault.

Divisional Commanders will arrange for the above patrols.

In addition, each Divisional Commander will arrange to make at least one raid on the enemy's trenches during this period for the purpose of securing identification and ascertaining damage done. Prisoners obtained during the bombardment are of the greatest value in gauging the effect on the enemy's morale of our artillery fire and other attentions.

Arrangements for passage of troops through our own wire.

19. The 18th and 30th Divisions will be responsible, within their respective areas, for clearing any gaps which it may be necessary to cut in our wire North of a line joining Copse G and Bronfay Farm. These gaps should be about 30 yards wide and be cut so as to facilitate the movement of reserves up to and across the Peronne road by the existing crossings over the latter. The sides of those gaps should be marked by poles standing about 3 feet above the ground and with a small piece of yellow cloth or straw tied round the top.

System of inter-communication.

20. (a) To render the troops more conspicuous to ground stations in rear, every infantry man will wear on his back a white, yellow or bright metal disc.

All observers must be cautioned that these discs are worn by all infantry, they do not therefore, like flags or flares, mark the position of our front line.

(b) To help observers in ground stations to distinguish the position of the front line of the infantry coloured flags will be carried at the rate of 1 per platoon and 1 per company headquarters :—

9th Division—Red and yellow, quartered diagonally.

18th Division—Red and yellow, halved diagonally.

30th Division—Blue and yellow, halved diagonally.

These flags will mean nothing unless waved : they are on no account to be stuck in the ground : they mean when waved " We are here and so far as we know the leading infantry and within 50 yards of the firing line ".

They will be used only on arrival on certain definite lines to be selected by Divisional Commanders and notified to Corps Headquarters and all concerned, or when checked before reaching the line given.

(c) Visual signalling will be used

i. by means of small black and white discs between firing line and company and battalion headquarters ;

ii. by lamp.

Divisions have arranged for establishing receiving stations (18th Division at A.13.d.40.13 and 30th Division at A.14.d.9.3) from which visual signals sent from a large portion of the area of operations will be visible. Certain points in the enemy's lines have been selected for use as sending stations when occupied.

(d) Wireless.

The 18th Division will establish an Advanced Wireless Station at A.19.a.5.8 and the 30th Division at Copse B. Each will be in communication with a Wilson control set at their joint divisional headquarters at L.16.b.3.7.

(e) Pigeons.

Pigeons will be used between advanced brigade stations previously determined upon and the lofts at Corbie and Etinehem.

(f) Kite Balloon.

The Corps Balloon, in the Bois des Tailles, will receive messages by night by lamp from

Battalion and Brigade Headquarters
and Artillery O.P.'s.

By day the balloon may be able to receive messages from the same as above by means of lamp, helio and panel screens, but as artillery work will take precedence it is thought that very few messages will be able to be accepted by day.

(g) Communication with aeroplanes.

Flares will be carried at the rate of 5,000 per division by officers, N.C.O.'s and selected men.

They will only be used by order of a company or platoon commander and only from the front line.

When used they will mean " We are here and so far as we know the leading infantry and within 50 yards of the firing line ".

Like flags they will be used only on arrival on the definite lines selected by Divisional Commanders or when checked before reaching the line given.

Flares will be lit in series of 3, each flare 3 to 4 paces from the other, and at $\frac{1}{2}$ minute intervals.

Mirrors will be used to attract the attention of aeroplanes but only on the order of a company or platoon commander.

Both flares and mirrors are intended chiefly as a means for aeroplane observers to obtain a general contour of the front line of our infantry.

Special signal lamps and signalling screens will be used for communication between battalion and brigade headquarters and contact aeroplanes : 3 aeroplanes will probably be available in the Corps for this purpose.

These lamps will also be used between battalion and brigade headquarters and the Corps Kite Balloon as above.

Contact aeroplanes will maintain touch with Corps Headquarters by means of :—

- (a) Wireless.
- (b) Dropped messages.
- (c) Personal visits of observers.

Observation Stations.

21. As observation stations for Staff Officers and the Corps Observation Service two posts are available :—

The Corps Post at A.14.d.0.5 and the Army Survey Post (by day only) at F.17.c.73.55.

These posts will each be occupied by one officer and some other ranks of the Corps Observation Service : their duty will be to keep Corps Headquarters informed as fully as possible of the progress of the battle : both posts are connected up with Corps Headquarters.

Distribution of Corps Troops.

22. (a) Corps Cavalry Regiment.

One troop will remain attached to each of the leading divisions.

The remainder (less those detached for duty under the A.P.M. and as orderlies) will be attached to the 9th Division as part of Corps Reserve from 6 p.m. of "Y" day : this cavalry will be ready to move from the Bois des Celestins at 2 hours on "Z" day.

- (b) Cyclist Battalion.

One company will remain attached to each of the two leading divisions. They may be employed to garrison strong points within our line as it now exists or for holding our front line trenches or other duty in rear of front line : except in emergency they will not be used further forward.

It is intended to withdraw these companies into Corps Reserve as soon as possible after the capture of our final objective.

Headquarters and 1 company will be attached to the 9th Division as part of Corps Reserve from 6 p.m. of "Y" day.

- (c) Motor Machine Gun Battery.

Will be attached to the 9th Division as part of Corps Reserve from 6 p.m. of "Y" day.

(d) Employment of R.E. Units of the Corps.

Corps R.E. Units will be disposed as follows :—

(i) Army Troop Companies.

Headquarters and 2 sections of No. 238 Army Troops Company R.E. will be placed at disposal of 18th Division from 6 P.M. "V" day.

2 sections of No. 238 Army Troops Company R.E. at disposal of 30th Division from same time.

No. 232 Army Troops Company will remain at disposal of C.E. and be employed in maintenance of the water pipe lines and their extension forward as circumstances permit.

No. 280 Army Troops Company R.E. will be in reserve under C.E. at Bray.

No. 142 Army Troops Company R.E. will be employed in workshops at Corbie and Saily Laurette under the C.E.

(ii) 183rd Tunnelling Company.

This Company will remain as now located until the morning of the assault when parties will complete the work of opening out the further ends of the Russian saps by firing the charges, and other work on which they are engaged.

The whole company (including those now employed under XV Corps) will be assembled at L.4 central and come under orders of C.E. XIII Corps during the night following the assault.

The necessary parties for dealing with the German mine shafts and galleries N.E. of Carnoy will be told off by C.E. XIII Corps.

The remainder will be used for work well in rear from which the necessary parties to commence any mining operations required later can be taken at a moment's notice.

The miners will not be employed on work right forward in the shelled area, such as clearing out trenches and making communication trenches through to the German line; such work will be performed by infantry under divisional arrangements.

(iii) Labour Battalion.

The D.C.L.I. Labour Battalion will be employed under C.E. for road maintenance and for work at canal wharves: they will be quartered in the Bois des Tailles, Bray and Chipilly, with $\frac{1}{2}$ company at Picquigney.

(iv) Entrenching Battalion.

Half the 7th (Guards) Entrenching Battalion now in the Corps area will be withdrawn on "T" day to Saily-le-Sec for work on Bray—Corbie road under the C.E.

Collection and Examination of Prisoners of War.23. (a) Collecting Stations.

Prisoners will be collected under divisional arrangements,

18th Division at Billon Farm and 30th Division at Dones Redoubt, Maricourt. From these places they will be sent to the main joint Divisional Collecting Station at Grove-town (L.14.b.8.8) and be sent back under divisional arrangements to the Corps Collecting Depot at Bois des Tailles (K.17.b.8.1). There they will be taken over by A.P.M. of the Corps.

(b) Examination.

The Corps Staff will undertake the examination of all prisoners at the Divisional Collecting Station. For this purpose there will be 3 Intelligence Officers available.

Those whom it is desired to examine more closely will be sent to Corps Headquarters.

(c) Communications.

The Divisional Collecting Station will be connected to Corps Headquarters by telephone and despatch rider, and to Army Headquarters by special pigeon service.

Arrangements for dealing with Stragglers.

24. A.P.M.'s of Divisions are responsible for police supervision as far up as the Divisional stragglers line which runs from L.4.a. central to Bronfay Farm, thence S.E. to the N.E. of Trigger Wood and Southwards along the Western edge of Ceylon Wood.

Brigades are responsible for all police arrangements North and East of this line.

The main joint Stragglers Collecting Station is at L.14.b.8.6.

Arrangements for evacuation of wounded.

25. (a) Ambulance cars of Field Ambulances will go as far as Bronfay Farm and Billon Farm by day, and to Carnoy and Maricourt at night. These will ply back as far as the Main Dressing Station at Dive's Copse—J.24.b.6.8. From thence to 21 Casualty Clearing Station, Corbie, and 45 Casualty Clearing Station, Vequemont, in care of No. 10 Motor Ambulance Convoy.

(b) Walking wounded will be collected at Engineer's dump North of Bray. (Here also is a straggler's post.) Medical Officers and R.A.M.C. personnel will supervise.

At a point South of the Bray—Corbie road near L.19.b.29 will be the rendezvous for vehicles for conveying walking wounded. An officer and personnel R.A.M.C. will also be here. Walking wounded will go to the Casualty Clearing Stations at Heilly.

(c) Police Posts for Stragglers: R.A.M.C. officers and other ranks will be detailed. That at Engineer's dump will have an officer and some other ranks from Collecting Station.

R.A.M.C. will be detailed to police certain points on roads to regulate ambulance traffic only.

(d) Corps Prisoners Enclosure: 1 Medical Officer and 3 other ranks with dressing and other medical appliances will be detailed.

Corps R.E. Dump.

26. (a) A Corps R.E. dump will be formed at Bray containing (1) the surplus of the Special Stores allotted to the XIII Corps over and above the requirements of the divisions. (2) Materials for six lorry bridges 16' span. (3) Timber. (4) General R.E. Stores.

(b) 800 tons of road metal will be collected for the repair of (1) Bronfay Farm—Carnoy—Montauban road. (2) Maricourt—Montauban road, West of the Briqueterie road. This material will be dumped about F.28.a.10.5.

Railways and Water Supply.

27. (a) The repair of the metre gauge track forward (except earth work) will be undertaken by the Army. In order that this track may be available up to a point S. of Montauban for trollies worked by the Corps from the day of advance, the Chief Engineer, Fourth Army, is being asked to arrange for a forward dump of metre gauge track for the purpose.

(b) The Corps will be responsible for maintenance of 60 c/m track laid by it : and materials for the purpose will be stored near Bronfay Farm, and along the lines.

(c) A water point will be established at Carnoy, where vehicles can fill up with water : and another between Talus Boisé and Montauban. The 4" main now being laid will terminate at Talus Boisé, but material etc. will be collected for an extension of this line forward towards Montauban, and a water point will be established at the best place South of that place. Materials for repair of this line will be distributed along it.

Clearing of the Battle-field.

28. This will be carried out under divisional arrangements.

The Divisional Salvage Company will form the nucleus of any such organization, and empty carts returning from the front will furnish the necessary transport.

Captured booty will be disposed of in accordance with the instructions that have already been issued on this subject.

Liaison with French XX Corps.

29. This will be maintained as follows :—

- (a) By a direct wire from Chipilly to XX Corps Headquarters at L.18.a.5.5.
- (b) By a British Officer, Captain J. V. Williams, 17th Manchester Regiment, attached G.S. XIII Corps, at French XX Corps Headquarters.
- (c) By a French Officer, Lieutenant Tassart, Liaison Officer, General Staff XX Corps d'Armée, at XIII Corps Headquarters.
- (d) Between Headquarters 30th Division and Headquarters French 39th Division (at Maricourt).
- (e) Between 89th Infantry Brigade and Left Brigade of 39th Division (through 39th Division Headquarters).

Battle Headquarters.

30. Battle Headquarters are as follows :—

XIII Corps	Chipilly.
Corps H.A. Commander	L.14.b.2.2.
29th H.A. Group	
(Counter Battery Group)	L.12.a.25.75.
33rd H.A. Group	
(Right Heavy How. Group)	L.12.a.25.75.
31st H.A. Group	
(Left Heavy How. Group)	L.12.a.25.75.
30th Division (Right Divn.)	L.16.b.5.2.
89th Inf. Bde. (Right Bde.)	A.21.b.3.2.
21st Inf. Bde. (Left Bde.)	Copse B (A.21.a.3.5).
90th Inf. Bde. (Supporting Bde.)	Copse B (A.21.a.3.5).
18th Division (Left Division)	L.16.b.3.7.
55th Inf. Bde. (Right Bde.)	A.25.d.6.5.
53rd Inf. Bde. (Centre Bde.)	A.25.b.4.8.
54th Inf. Bde. (Left Bde.)	F.24.c.5.5.
9th Division (Reserve Divn.)	Grovetown
"A" Inf. Bde.	Billon Wood Valley.
"B" Inf. Bde.	Grovetown.
"C" Inf. Bde.	Bois des Celestins.

These will be taken up as follows :—

Corps Headquarters	"T" day.
H.A. Groups	"T" day.
Leading Divisions	"T" day.
9th Division	"X" day.

Headquarters of 9th Division from morning of "U" day will be at Etinehem, moving probably from Saily Laurette.

"A" Offices of all 3 divisions will be at Etinehem on their divisions taking up their respective battle headquarters.

French XX Corps L.18.a.5.5.

French 39th Division Old Brewery, Maricourt.

Left Brigade of 39th Division Round Point, Maricourt.

Reports and Messages.

31. Messages and letters intended for the Battle Headquarters of Corps and Divisions will be addressed :—

XIII Corps
18th Division
30th Division
9th Division

All other messages and letters for Corps and Divisions will be addressed :—

XIII Corps 2nd Echelon
18th Division 2nd Echelon
30th Division "
9th Division "

and will be sent to Corbie and Etinehem, respectively.

The greatest care is to be taken regarding the proper use of these addresses so as to prevent Battle Headquarters being burdened with unnecessary messages and correspondence.

W. H. GREENLY,
B.G.G.S.

XIII Corps,
15th June, 1916.

APPENDIX "C".

PROGRAMME OF PRELIMINARY BOMBARDMENT.

1. Wire cutting. All day from "U" to "Y" days.
2. Bombardment of hostile trench system, fortified localities and strong points, O.P's, and M.G. emplacements, water supply, etc.

On "U" day, no increase beyond the normal except for registration.
 On "V" day, registration only for all natures of howitzers by day, and intermittent fire by night.
 From "W" to "Y" days, all day and at intervals during the night by all natures of howitzers.
 Concentrated bombardment for 1 hour and 20 minutes as follows:—
 "W" day—9 A.M. to 10.20 A.M.
 "X" day—4.30 A.M. to 5.50 A.M.
 "Y" day—6 A.M. to 7.20 A.M.
 "Z" day—Concentrated bombardment from - 65 to zero. Subsequently as per Corps Artillery programme.
8. Bombardment of billets.

On "U" day, no increase beyond normal except for registration.
 On "V" day, concentrations of fire only.
 From "W" to "Y" days, concentrations of fire and intermittent fire.
 On "Z" day, from - 65 under constant fire.
4. Shelling of communications, approaches, railways, working parties, etc., with the object of preventing replenishment of ammunition, food and water.

On "U" and "V" days, all night.
 From "W" to "Y" days, all night.
 By day as required.
 On "Z" day, from - 65 under constant fire.
5. Counter-battery work.

From "U" to "Y" days. Very active.
 On "Z" day, very active. Concentration of gas shells on hostile gun positions before the assault.

6. Shelling of villages, strong points, etc., by 240 mm. mortars.
On "U" day, no increase beyond normal.
From "V" to "Y" days, as required.
On "Z" day, concentrated bombardment - 65 to zero. Subsequently as per Corps Artillery programme.
7. Wire cutting and bombardment of front line trenches by 2" medium mortars.
From "U" to "Y" days, as required for wire cutting.
On "Z" day, as per Corps Artillery programme.
8. Front line trenches and M.G. emplacements, by 3" Stokes mortars.
On "U" day, no increase beyond normal.
From "V" to "Y" day, as required.
On "Z" day, hurricane bombardment of front line system from - 8, including ranging rounds.
9. Establishment of smoke barrage by 4" Stokes mortars (smoke).
On "Z" day, as required for flank barrage, but not to commence before - 8.
10. To lead enemy to believe that an assault is about to be made and induce him to man his front trenches.
"P" bombs and candles.
On "W" to "Y" days, discharge of smoke during last 5 to 10 minutes of the concentrated bombardment.
To be accompanied after short intervals by shrapnel barrage on front trenches and searching of communication trenches and heavy bombardment of reserve billets and communications.
11. Flame projectors to burn out hostile trenches when within range.
On "Z" day, as required commencing at - 10.
12. Gas. To inflict loss on enemy by taking him by surprise at night.
From "V" to "Y" days, at night if wind is favourable, i.e. S. to S.W. (both inclusive) as per programme to be notified from Corps Headquarters by 5 P.M.
13. Gas shells.
From morning of "Z" day onwards.
No British gas shells to be fired into any place which is to be occupied by our troops.
French gas shells may be fired into Montauban and the Briqueterie up to the hour at which the infantry advance.
4.5 howitzer lacrymatory shell are not to be used before "Z" day.
Nos. 4 and 5 shells from French 75 mm. guns may be fired at any time from "W" day inclusive at the discretion of Corps.

PART II.

1. The general intentions of the Army Commander for the Second and Third Phases and the tasks allotted to the XIII Corps have been indicated in the Plan of Operations for the First Phase.

The success of subsequent operations will depend to a large extent on the consolidation and retention of the objectives gained in the First Phase.

2. During the Second Phase the XIII Corps will act as follows :—

- i. Ensure at all costs the retention of the objectives gained in the First Phase, especially Montauban which forms the pivot of the whole movement.

- ii. Assist with its fire and by every other possible means the advance of the XV Corps.

3. There will be as little delay as possible between the First and Second Phases. This will depend upon the time required for advancing such artillery as it is necessary to move, for preparing the advance with artillery fire, and for organising the infantry attack.

For the Second Phase both the III and X Corps will each be reinforced by an extra division from the Army Reserve.

The XV Corps will be assisted by all available artillery of the XIII Corps.

It is hoped that the delay between the First and Second Phases will not exceed three days ; it may be shorter, and we must be prepared on the one hand to assist the XV Corps to advance after a delay of 2 days and on the other to hold our new line for an indefinite period.

During this delay all commanders will do all that is possible,

- (a) to strengthen their position in every way,

- (b) to facilitate subsequent operations of the XV Corps towards the brown line.

4. After the capture of their final objective the 30th Division will be relieved by the 9th Division.

It is hoped that this relief will take place during the night of 30th June/1st July.

On the relief taking place the 30th Division will withdraw to Grovetown, Northern Bois des Tailles, and come into Corps Reserve. Copse Valley and half Billon Wood Valley will be available for the reserves of 9th Division and half Billon Wood Valley and Trigger Wood Valley for the 18th Division.

Headquarters of 9th and 30th Divisions will change places. G.O.C. 30th Division will assume command of Corps Troops forming part of Corps Reserve.

5. It is intended that the position of our troops before the Second Phase commences shall be as follows :—

9th Division in the line on the right,
 18th Division in the line on the left,
 30th Division in reserve in Grovetown and Bois des Celestins.

It is probable that before the XV Corps commence their advance towards the brown line they will have taken over part at least of the line held by the 18th Division : they may possibly take over the whole of the 18th Division front.

It is not possible at present to say which night this relief will take place.

6. In any case as the XV Corps make good their advance during the Second Phase any troops of 18th Division not previously relieved will gradually be withdrawn to Bray, Grovetown and Etinehem, troops of the 30th Division moving Westwards to make room for those of the 18th Division.

At the conclusion of this Phase, i.e. when the brown line has been secured by the XV Corps, the distribution of the Corps will be as follows :—

9th Division in the line,
 18th Division Etinehem, Bray and Grovetown,
 30th Division Bois des Celestins and West of latter.

7. Action in the event of the enemy's resistance breaking down.

During the first two phases there may arrive a moment when the enemy's resistance may break down, in which case the advance of the Army will be pressed Eastwards far enough to enable our cavalry to push through into the open country beyond the enemy's prepared line of defence ; that is, beyond his main Second Line between Pozières and Grandcourt.

The object of the Army Commander will then be to attack Northwards, taking the enemy's line in flank and reverse ; the bulk of the cavalry will operate on the outer flank of this operation to cover the deployment of the troops attacking Northwards : they will be supported by such divisions as are available from the Army Reserve and will secure the line Les Boeufs—Bapaume—Behagnies. This force will be commanded by Lieut.-General Sir H. Gough.

8. In the event of the cavalry pushing through as above the XIII and XV Corps will advance to secure the purple line, thus forming a defensive flank to the rest of the Army further North.

The French XX Corps will advance in conjunction with the XIII Corps and will capture Maurepas : the XV Corps will capture Ginchy and Longueval and extend its left flank to gain touch with General Gough's force about Les Boeufs or Flers.

9. In the event of the enemy's resistance not breaking down as above and hard fighting ensuing on the green line it is probable that the operations of the Fourth Army will not for the present extend beyond the capture of the brown line.
10. Immediately on conclusion of the Second Phase preparations will be completed for carrying out the advance to the purple line should it eventually be ordered.

These will consist in :—

- (a) The 18th or 30th Division, whichever is the freshest of the two, will take over from the 9th Division the part of the front from which they will attack, that is from our junction with the French in A.10.b.75.80 to Glatz Redoubt.
- (b) Rearrangement of the Divisional Artillery to cover the advance.
- (c) Redistribution of Corps Artillery.
- (d) Completion of new communication system.

It may become necessary to move the centre of gravity of the rearward divisions and lines of supply more to the North, the XV Corps conforming by clearing part of the Southern half of their area, and the French XX Corps taking over more ground on the North bank of the Somme.

11. As regards the operations of the Third Phase, only very general instructions can be given at present.

The probable tasks of the assaulting divisions may be indicated as follows :—

- (a) Firstly, the capture by the 18th or 30th Division of the Hardecourt Plateau in conjunction with the French XX Corps which will capture Hardecourt, and simultaneously the capture by the 9th Division of the German defences as far as the Eastern edge of Trones Wood in conjunction with the XV Corps which will capture Longueval. The XV Corps will have received a fourth division prior to this operation.
- (b) Secondly, the capture of the German defences between Falfemont Farm and Guillemont, both inclusive, in conjunction with the French XX Corps on our right which will capture Maurepas, and the XV Corps on our left which will capture Ginchy.

In this operation the 18th or 30th Division will assist the advance of the 9th Division by the constant endeavour to turn and bring enfilade fire to bear upon the enemy in front of the latter Division.

W. H. GREENLY,
B.G.G.S.

XIII Corps,
23rd June, 1916.

PART III.

Instructions for the Second Phase.

NOTE.—The days following "Z" day will be lettered A, B, C, etc.

1. The attached map,¹ Second Phase, shows the boundaries between the XIII Corps and the XX French Corps, and the XIII Corps and the XV Corps, respectively.

¹ Not reproduced.

These boundaries come into force at 12 midnight of the day on which we gain the Green Line.

The moves entailed will be carried out in accordance with 132/32 (G) dated 26th June; orders will be issued by Corps Headquarters when they are to take place.

2. During this phase the French XX Corps will allow XIII Corps to retain :—

Corps Headquarters at Chipilly.
 Divisional Battle Headquarters as at present.
 Divisional Headquarters, 2nd Echelon, at Etinehem.
 Headquarters Heavy Artillery
 Headquarters Heavy Artillery Groups } as at present.

XIII Corps will also retain the use of the ammunition dump at Etinehem and route from it as already notified.

3. The proposed positions of the Corps Artillery for the operations of this phase are also shown on attached map; those positions will be taken up in accordance with 132/27 (G) dated 24th June.
4. The instructions issued in Plan of Operations, Part II., hold good except where modified below.

It is intended to relieve the 30th Division by the 9th Division probably during the night "B"/"C".

On relief the 30th Division will withdraw to Grovetown, Northern Bois des Tailles and Bois des Celestins, 1 brigade to each place.

Headquarters of the 9th and 30th will change places: 30th will assume command of Corps Troops in Corps Reserve.

5. It is intended that the position of our troops before the infantry offensive in the Second Phase commences shall be :—

9th Division in the line on the right.
 18th Division in the line on the left.
 30th Division in reserve as in para. 4.

Copse Valley, Trigger Wood Valley and Billon Wood Valley will be available for the reserves of the 9th and 18th Divisions.

It seems probable that the infantry offensive in the Second Phase will begin on the morning of "C" day.

6. Possibilities in regard to the action of the XV Corps in event of easy attainment of the objective of the first day's operations have been indicated in 132/33 (G) dated 26th June.

The probable alternatives therefore with regard to the movements of our left division after attainment of the Green Line and prior to the main advance of the XV Corps to attack the Brown Line are either :—

- (a) In the event of the XV Corps establishing their line East of Mametz Wood the left division will retain the line of their original objective along its entire length but will at the same time furnish connection with the right of the 7th Division by securing and holding the N.W. portion of Caterpillar Wood.

or (b) The left division will remain on the Green Line in touch with the 7th Division near S.25.b.3.0.

In both cases before the XV Corps commence their advance to attack the Brown Line their two right divisions will require to take over at least part and probably the whole of the front of the 18th Division.

The 7th Division on the left will take over as far East as Caterpillar Trench, the 17th Division on the right as far East as the right of the 18th Division.

The relief will be carried out from left to right, first the 7th Division and then the 17th Division; it will probably take place on the night "A"/"B" day.

For this relief the action required of the 18th Division will probably be :—

- (a) To withdraw two brigades complete to the Happy Valley, put at our disposal by the XV Corps; possibly part of the Citadel Valley will also be made available.
- (b) To withdraw the remainder of the division temporarily, and only so far back as is necessary, to make room for the troops of the XV Corps, and prepare to reoccupy their original line as soon as the XV Corps troops have advanced clear of it. After this advance the 18th Division will remain responsible for the defence of their original objectives, i.e. the Green Line.

During the actual carrying out of this operation the troops of the 18th Division will require to be withdrawn S.E. of the Carnoy—Montauban road. Definite instructions regarding this will be issued in due course.

The G.O.C. 18th Division will remain responsible for the defence of his original objective (Green Line) until the XV Corps have established themselves on the Brown Line in touch with the division of the XIII Corps holding Montauban. The remainder of the 18th Division will then withdraw to Citadel and Happy Valleys. Citadel Valley will by then be available.

7. The point of junction between the two Corps on the XV Corps attaining the Brown Line will be near the Quarry at S.22.c.0.5. The division holding Montauban will carry out the necessary operations in conjunction with the 17th Division of XV Corps to connect up with them at this point.
8. With a view to assisting and covering the advance of the XV Corps to the Brown Line the XIII Corps will :—
 - (1) Take over all counter-battery work East of the Montauban—High Wood road.
 - (2) Undertake to deal (by artillery fire) with any counter attack from the East, as far North as the hostile line of defence running from Longueval towards Bazentin le Grand.

The XV Corps will continue to enfilade the Caterpillar Wood Valley.

- (3) Assist in the bombardment of the enemy defences which are to be attacked by XV Corps.

If not required for our own defence, and as far as counter battery work permits, the following guns will be available :—

1 battery—12" Hows.
1 battery—9.2" Hows.
1 battery—8" Hows.
4 batteries—6" Hows.
4 batteries—60 pdrs.
2 6" Guns Mk. VII.

plus about half the Divisional Artillery of the Corps.

- (4) So far as is possible, assist in cutting the wire in front of the German Second Line.

9. From the time at which the Green Line is captured the movement and grouping of divisional artillery will conform to the following :—

1st Period : before the XV Corps advance to the capture of the Brown Line.

The artillery as originally grouped will continue to defend the new front.

After the relief of the 30th Division by the 9th Division the G.O.C. 9th Division will take over the artillery as now grouped under the G.O.C. 30th Division.

2nd Period : during advance of XV Corps to capture the Brown Line.

The artillery as originally grouped under the G.O.C. 18th Division will be primarily responsible for offensive action to assist the advance of the XV Corps (see para. 8 above).

The artillery as originally grouped under the G.O.C. 30th Division will be primarily responsible for the defence of the front from our junction with the French to Montauban under the G.O.C. 9th Division.

3rd Period : after the capture of the Brown Line and before the advance to attack the Purple Line. (This period forms part of the Third Phase.)

After the capture of the Brown Line and the consequent freeing of the 18th Division, the artillery as originally grouped under the 30th Division will continue to defend our new front (South-eastwards from Montauban) under the G.O.C. 9th Division.

During this period, commencing as early as possible after the capture of the Brown Line, a regrouping of the artillery will begin.

The whole of the 9th Division will be grouped together under the G.O.C. 9th Division, strengthened by about half the artillery of the division in reserve.

The division which is to carry out the attack on the Purple Line in conjunction with the 9th Division will by then be known—it will be the freshest of the two, 18th or 30th—and this division will take over part of the front from the 9th Division (from the Glatz Redoubt (exclusive) to the right of the XV Corps), probably on night “C”/“D” day.

This division will be covered by its own divisional artillery, strengthened by about half the artillery of the division in reserve.

All movements of divisional artillery during the operations leading up to the Third Phase will be made in such a way as to facilitate the above.

After the final withdrawal of the 18th Division, on the capture of the Brown Line by the XV Corps, and until such time as the Northern portion of his front is taken over by another division, the G.O.C. 9th Division will command the whole of the divisional artillery of the Corps.

10. After the capture of the Brown Line (probably on “C” day) the Third Phase commences and there will be a readjustment of boundaries as shown on map with “Instructions for the Third Phase”, to be issued shortly.

This will entail the evacuation of Grovetown by all troops of the 30th Division then in Grovetown (see para. 4 above): these will move to the Northern Bois des Tailles, room being made for them as necessary by other troops of the division moving Westwards.

As soon as the Brown Line has been captured the whole of the Citadel Valley will be available for the XIII Corps. Also the Headquarters dug-outs of the 7th Division in Grovetown Valley, and remainder of area shown on map to be issued with “Instructions for the Third Phase”.

11. The position of the Corps at the beginning of the Third Phase and before the taking over by another division of a portion of the front of the 9th Division will be :—

9th Division in the line.

18th Division in support in Citadel and Happy Valleys.

30th Division in reserve in Northern Bois des Tailles and Morlancourt.

W. H. GREENLY,
B.G.G.S

XIII Corps,
29th June, 1916.

PART IV.

Instructions for the Third Phase.

1. The attached map,¹ Third Phase, shows the boundaries between the XIII Corps and the XX French Corps, and the XIII Corps and the XV Corps, respectively.

These boundaries come into force as soon as the Brown Line has been captured: the 9th Division will extend its right to within about 150 yards of the N.W. corner of the Favière Wood, as shown on map.

¹ Not reproduced.

2. During this phase the French XX Corps will allow the XIII Corps to continue to retain :—

Corps Headquarters at Chipilly.

Divisional Headquarters as at present occupied by the 18th and 30th Divisions.

H.A. Headquarters
H.A. Group Headquarters } as at present.

There will also be a Divisional Headquarters in Grovetown available, that now occupied by the 7th Division.

Until such time as the Meaulte—Mametz road is open the XIII Corps will also have the right to use the Bray—Bronfay Farm road and the dump at Etinehem, as before, for purposes of ammunition supply only.

The XIII Corps will also retain the use of the supply barge head at Sailly Laurette and route from it as already notified.

As regards the boundary with the XV Corps, the XIII Corps can count on being able to use Mametz.

The new boundaries as shown on map must be carefully examined as there have been several slight alterations to those originally fixed.

3. The proposed positions of the Corps Artillery for the operations of this phase are also shown on attached map.

It is intended that by this time the divisional artillery will be so grouped that the 9th Divisional Artillery are together on the right, 18th or 30th on the left and the artillery of the division in reserve divided between the two leading divisions, but grouped so as to retain their permanent tactical units so far as possible.

4. The probable position of the Corps at the beginning of the Third Phase and before part of the 9th Division front has been taken over by another division has been given in "Instructions for the Second Phase". It is :—

9th Division in the line.

18th Division in support in Citadel and Happy Valleys.

30th Division in reserve in the Northern Bois des Tailles and Morlancourt.

5. As soon as possible after the reliefs referred to in "Instructions for the Second Phase" have been carried out, the 18th or 30th Division will take over from the 9th Division the portion of the front from the Glatz Redoubt (exclusive) to the right of the XV Corps.

The position will then be :—

9th Division in the line on the right.

18th or 30th Division in the line on the left.

Reserves of the two / in the area Talus Boisé—Carnoy—
leading divisions \ Mametz—Citadel Valley.

30th or 18th Division, whichever is in reserve, in the Northern Bois des Tailles and Morlancourt.

Previous to the attack the reserve division will move up to the Citadel and Happy Valley.

6. The attack will be carried out in two stages, with as short an interval between the two as possible : this interval will depend upon the progress made by ourselves and also the Corps on our right and left, it may possibly extend to 2 days.

First Stage.

(a) The first objective of the right division will be to establish itself on the Hardecourt plateau, its right in touch with the French XX Corps, along approximately A—B on the dotted red line : the first objective of the left of the French XX Corps is shown by the continuation of the dotted red line to the South-east of B.

The right division will advance their line North-east of Maltz Horn Farm sufficiently far to obtain observation down the valley running from the South of Angle Wood towards the North-west, and as far as possible of the N.E. slopes of the Maltz Horn—Hardecourt spur.

It will endeavour to gain good points of observation for seeing the hostile defences between Maurepas and Guillemont.

(b) The first objective of the left division will be to establish its right on the road N. of Maltz Horn Farm in touch with the right division near the elbow in the track at S.30.d.2.2, and secure the Eastern edge of the Trones Wood with its left in touch with the XV Corps at the Northern end of the Wood. The responsibility for the capture and defence of the Trones Wood rests with the left division of the XIII Corps.

These objectives will be consolidated as soon as gained.

On attaining the first objective, it will probably be necessary to pause in order to bring up field artillery to cut the enemy's wire and deal with the defences on his 2nd line.

During this pause preparatory to the 2nd Stage, the right division will extend its flank to the South as shown in sketch map attached,¹ taking over from the French XX Corps as far South as C.

The line C—Z will then become the dividing line between the XIII Corps and XX French Corps, but the latter will remain responsible for the defence of the whole of Favière Wood in the event of retirement.

Second Stage.

(c) The second objective of the right division will be the capture of the enemy's 2nd line between the Maurepas—Combles railway and Guillemont (exclusive).

It will establish connection with the left of the XX French Corps on the railway at about B.3.c.8.9.

(d) The second objective of the left division will be the capture of Guillemont and a footing on the spur S.E. of Ginchy, which village will be captured by the XV Corps.

It will establish connection with the XV Corps at the point where the Ginchy—Combles road crosses the railway at T.20.a.10.70.

¹ Not reproduced.

7. In gaining the objectives stated above the right division will assist the advance of the left by the constant endeavour to turn and bring enfilade fire to bear upon the enemy in front of the latter.

These objectives will be put into a state of defence as soon as gained: first attention being given to the strengthening of tactical points which will facilitate our further advance and artillery observation beyond the line gained.

W. H. GREENLY,
B.G.G.S.

XIII Corps,
29th June, 1916.

CONTINGENT FORECAST OF OPERATIONS
OF 2ND & 3RD PHASES.

1st Phase	Day Z	1st phase ends on capture of green line.
2nd Phase	Z	2nd phase begins after capture of Green line.
	A	Consolidation of Green line. Preparation to support advance of XV Corps.
	Night A/B	Relief of two left Bdes. of 18th Divn. by XV Corps. These Bdes. move to Happy & Citadel Valleys.
	B	Preparation to support XV Corps in attack on Brown line.
	Night B/C	Relief of 30th Divn. by 9th Divn. 30th Divn. move into reserve at Grovetown, Northern Bois des Tailles and Bois des Celestins.
3rd Phase	C	2nd phase ends on Capture of Brown line by XV Corps.
	C	3rd phase begins after capture of Brown line. Last Bde. of 18th Divn. withdrawn to Happy Valley and Citadel Valley. 9th Divn. holds XIII Corps front.
	Night C/D	18th Div. take over northern portion XIII Corps front connecting up with right of XV Corps. 9th Divn. extends its right to within 150 yards of N.W. edge of Favière Wood.
	D	Preparation for 3rd Phase.
	E	Preparation for 3rd Phase.
	F	Attack on Purple line by 9th & 18th Divns. 1st Stage begins.
	G	Consolidation of line A—B and extension of front to C.
	H	2nd Stage begins. 3rd Phase ends on capture of Purple line.

Remarks.—Circumstances may render it desirable to substitute 30th for 18th Division in 3rd Phase.

PART V.

1. After the reliefs ordered have been carried out the general situation of the Corps will be as follows :—

9th Division in the line on the right.

3rd Division in the line on the left.

30th Division in the Happy Valley and the Northern Bois des Tailles.

NOTE. Some troops of 30th Division may be in the line on the right of the 9th Division preparatory to forming the defensive flank to the right mentioned below, and be providing the garrisons of Montauban and The Briqueterie.

18th Division in Grovetown and the Bois des Celestins.

2. The Corps will be prepared to continue the attack at any time after these dispositions have been taken up.

The general plan of operations is for the XIII Corps to attack the enemy's 2nd line system between Waterlot Farm and Bazentin-le-Grand (both inclusive), forming a defensive flank on the right in conjunction with the French who will have taken the plateau between Hardecourt and Maltz Horn Farm, and in co-operation with the XV Corps on the left who will attack the Bazentin Woods.

3. Objectives are allotted to divisions as follows :—

Right (9th) Division.

The capture of Waterlot Farm, Longueval and Delville Wood.

Left (3rd) Division.

The capture of Bazentin-le-Grand and the German defences to the W. of Longueval.

The 30th Division.

To establish a defensive flank along the Eastern edge of Trones Wood connecting up with the French near Maltz Horn Farm and with the right of our right division near Waterlot Farm.

The 18th Division.

To be in reserve.

4. Boundaries.

(a) That between the 30th Division and the French is not yet decided.

(b) Between the 30th Division and the 9th Division, a line from the Eastern edge of Delville Wood in S.18.b., thence just East of Waterlot Farm to the point where the Carnoy light railway enters Trones Wood at S.29.b.4.9, thence the railway as far as Bernafay Wood.

(c) Between 9th Division and 3rd Division, the road from S.11 central, through S.17 central, through S.22.b.5.0 to Montauban at S.27.b.9.4 ; (this road to be inclusive to 9th Division).

(d) Between 3rd Division and XV Corps, a line running along the Eastern edge of Bazentin-le-Grand Wood in S.15.a., past the point where trench crosses road at S.20.b.4.9 to centre of bend in Caterpillar Wood at S.20.c.6.4.

(e) These boundaries are provisional and must depend on developments which may occur in the situation.

Boundaries this side of our present front line cannot at present be definitely fixed.

5. As regards communications the two main systems used by the 30th and 18th Divisions in the first phase of the operations will continue to be used and carried forward by the right and left divisions, respectively.

The 30th Division will prepare an independent system from an Advanced Headquarters in the neighbourhood of Maricourt or the Talus Boisé suitable for the operations which it has to undertake.

6. Corps Headquarters will remain at Chipilly.

W. H. GREENLY,
B.G.G.S.

XIII Corps,
29th June, 1916.

THE SOMME, 1st JULY 1916

XIII CORPS OPERATION ORDER No. 14.

23rd June, 1916.

Maps 1. (a) The enemy forces in front of the Fourth Army, from Maricourt to Hebuterne, are believed to consist of 5 divisions of the German 2nd Army; of these 4 divisions are in the line and 1 division (2nd Guard Reserve Division) in reserve about Bapaume. In addition the enemy has the 6th Reserve Corps (2 divisions) near Cambrai as a strategic reserve to this part of his front.

- (b) The enemy holding the front to be attacked by the XIII Corps consists of 2 regiments (6 battalions) of the 12th Division, i.e. 62nd Regiment opposite the right portion of our front and 23rd Regiment opposite Carnoy and the left portion of our front.

No change in the positions of the enemy troops as last reported is known to have taken place.

2. The Fourth Army has been ordered to take part in a general offensive with a view to breaking up the enemy's defensive system and of exploiting to the full all opportunities opened up for defeating his forces within reach.

The Third, First and Second Armies will undertake offensive operations at various points on their fronts in conformity with the attack of the Fourth Army. The French will also assume the offensive on both banks of the Somme.

3. The tasks allotted to the XIII Corps are as follows:—

- i. To capture and hold Montauban and the high ground running Westwards from that place through S.25.b, connecting with the French XX Corps on the Briqueterie—Maricourt Spur and with the XV Corps at S.25.b.
- ii. To assist the XV Corps in its advance to the capture of Bazentin-le-Grand and the enemy defences between that place and Montauban.

4. The first day's operations will be carried out in accordance with the Plan of Operations already issued to all concerned.

As soon as the final objective of the first day's operations has been secured and consolidated, preparations will immediately be undertaken for carrying out the second phase, i.e. 8 (ii) above.

5. The Corps Commander wishes to impress on all Commanders that the success of the operations as a whole largely depends on the consolidation of the definite objectives which have been allotted to each division. Beyond these objectives no serious advance is to be made until preparations have been completed for entering on the next phase of the operations.
6. (1) The first day's operations will be preceded by a preliminary bombardment commencing on 24th instant ; during the bombardment a general gas attack will be delivered.
Instructions regarding the above have already been issued to all concerned.
- (2) At zero hour (0.0.) on 29th instant the five Corps of the Fourth Army and the French Forces astride the Somme will attack simultaneously.
The actual time of zero will be notified later.
7. The movements preliminary to the 29th instant have already been notified.
8. XIII Corps Headquarters will be established at Chipilly from 6 P.M. 28rd instant.

W. H. GREENLY,
B.G.G.S.

XIII Corps,
23rd June, 1916.

THE SOMME, 1ST JULY 1916

XV CORPS' INSTRUCTIONS FOR A PRELIMINARY BOMBARDMENT ¹

Maps 1A, 1. The preliminary bombardment will be carried out on "U", "V", "W", "X" & "Y" days. Wire will be cut during all 5 days.

On "V", "W", "X" & "Y" days and during the nights "U"/"V" to "Y"/"Z" inclusive a continuous bombardment will be carried out.

On "V" & "W" days there will be one, and on "X" & "Y" days two, concentrated bombardments.

Gas will be discharged on the first night that the wind is favourable, and smoke on the morning of "X" day if the direction of the wind permits.

240 mm. Trench Mortars may be used as required from "V" day onwards.

2" Trench Mortar for wire-cutting on "U" day and as required afterwards.

3" Stokes Mortars as required on "V" day and onwards.

2. The principal tasks to be carried out are :—

A. Heavy and Siege Artillery.

1. Destruction of enemy's front system of defences.
2. Destruction of trenches and strong points further back.
3. Distant wire-cutting.
4. Bombardment of villages, woods, railways and stations.
5. Interrupting communications which are beyond the reach of Field Artillery by night.
6. Bombarding distant billets by day and night.
7. Counter-battery work. This to include the destruction of distant O.P.'s.
8. Preventing enemy repairing damage.
9. Dealing with balloons.
10. Destruction of water pipe lines.

B. Divisional Artilleries.

(i) 18 pr. Batteries :—

1. Wire-cutting.

¹ The tracings mentioned are not reproduced.

2. Searching trenches, villages, woods, O.P.'s and hollows by day and night.
3. Destruction of machine gun emplacements, O.P.'s and dug-outs within the power of the gun.
4. Interruption of communications especially by night.
5. Preventing enemy repairing damage.
- (ii) 4.5" How. Batteries :—
 1. Assisting in destruction of fire trenches.
 2. Destruction of all communication trenches.
 3. Assisting in bombardment of villages and woods.
 4. Complete destruction of machine gun emplacements, O.P.'s and dug-outs not entirely destroyed by the Siege and Heavy Artillery.
 5. Interruption of communications, especially by night.
 6. Preventing enemy repairing damage.
- C. Trench Mortars (under Divisional G.O.'s C.R.A.).
 - (i) Heavy and Medium :—
 1. Destruction of enemy's defences and bombardment of villages within range.
 - (ii) Medium :—
 1. Wire-cutting.
 2. Preventing enemy repairing work by night.
 3. Night firing on front system.
3. A list of important points will be issued later (Appendix 1), and each Battery Commander is to be given a list of those which are in the areas he is to bombard.
 In bombarding villages and woods particular attention should be paid to the defences on the outskirts, but strong points, road junctions, communications and likely billets inside the area should also be dealt with. Woods and hollows where there are no known defences should have a few rounds fired into them at intervals during the day.
4. The two Divisions in the line and the Heavy Artillery will have the following extra batteries allotted to them for the bombardment :—

7th Division—2 Brigades	{ 24 guns—18 prs.
2" T.M.	{ 4 howitzers—4.5"
3 batteries	{ 12 guns
240 mm. Mortars	{ 4 guns.
1 battery	
21st Division—2 Brigades less	{ 24 guns—18 prs.
1 Howitzer Battery	{ 4 howitzers—4.5"
2" T.M.—2 Batteries	—8 guns.
Heavy Artillery—1 Battery	—4 howitzers—4.5"
5. G.O.'s C.R.A. of Divisions will allot the tasks for their own batteries. In addition they will arrange, (a) for the necessary guns to join in the concentrated bombardments ordered, (b) to carry out the special tasks allotted to the 4.5" howitzers on tracings A B C and D, (c) for the gas and smoke discharges to be accompanied by a heavy shrapnel barrage on the front line

trenches, searching communication trenches, and heavy bombardment of reserve billets and communications.

6. The tasks for the Heavy Artillery are shewn on attached tracings. They consist of :—

Bombardment	" V " & " X " days	—Tracing A.	
	" W " & " Y " days	—	B.
Concentrated bombardment	" V " & " W " days		
	" " mornings of " X "		
	" " & " Y " days		C.
Concentrated bombardment	afternoons		
	" X " & " Y " days		D.

The whole of the fire trenches are to be thoroughly bombarded and special attention paid to places from which flanking fire can be brought to bear, machine gun emplacements, O.P.'s and trench junctions.

Heavy howitzers must cease firing for a certain period on W, X, and Y days to permit of photography, verification of fire and examination of equipment.

The times will be fixed later but they will not be prior to the morning concentrated bombardments.

In addition to the above tasks the G.O.C. H.A. will arrange—

- (a) to bring a heavy fire from all available guns and howitzers twice by day and once by night, and to fire a few rounds at irregular intervals on Longueval and Bazentin-le-Grand. He will also arrange to fire a few rounds on Flers.
- (b) to bombard the railways between—
 - (i) Trones Wood and Guillemont Station ;
 - (ii) Fricourt and Martinpuich.
- (c) to carry on Counter-battery work very actively beginning on " U " day.

Special batteries will be told off for this work, and if necessary heavy howitzers.

- (d) to bombard heavily distant billets, villages and communications during the discharge of gas and smoke.

7. Night Firing.

For night firing areas will be allotted as follows :—

Right Division.

Black Hedge (inclusive)

Valley S 25 b 59

X 29 b 0498

X 29 central

X 29 c 52

Willow Avenue (exclusive) to Front Line.

Left Division.

Willow Avenue (inclusive) from Front Line to X 29 c 52

N.E. corner of Bottom Wood

Road junction X 22 a 04

Thence to Front Line.

Heavy Artillery.

Beyond the Divisional areas.

G.O.'s C.R.A. of Divisions and G.O.C. Heavy Artillery will allot the tasks for night firing.

They must endeavour—

1. to interrupt all communications by road, rail or trench.
2. to prevent any movement in enemy's trenches or repair of defence.
3. to give the enemy no rest in trenches or billets. For this purpose the villages must be fired on at intervals with howitzers as well as field guns.

Medium Trench Mortars can be used for the above purposes, but Heavy Trench Mortars only if well concealed.

Care should be taken to allot the tasks so that the detachments get as much rest as possible.

8. Ammunition.

G.O.'s C.R.A. of Divisions and G.O.C. Heavy Artillery will allot the amount of ammunition they consider necessary for each task.

9. Times.

The hours for carrying out the different tasks are shewn in Appendix II.¹

10. G.O.'s C.R.A. of Divisions and G.O.C. Heavy Artillery will send in their schemes to Corps Artillery for approval by noon 15th inst.

E. W. ALEXANDER,
Brigadier-General R.A., XVth Corps.

June 12th, 1916.

¹ Not reproduced.

THE SOMME, 1ST JULY 1916

XV CORPS' INSTRUCTIONS FOR A CONCENTRATED BOMBARDMENT, BARRAGES AND FURTHER SPECIAL OPERATIONS ¹

1. On "Z" day :—
Map 7. (a) A concentrated bombardment will be carried out starting 65 min. before zero.
Zero will be the hour at which the assault commences.
(b) This will be followed by further bombardments on objectives to be taken successively until the furthest is reached.
(c) After this last has been reached there will be a bombardment on the Fricourt Area. The bombardment will commence at 30 min. before zero, which hour will be fixed during the course of operations.
Lines for artillery barrages and times for lifts are shewn in Appendix I.
The different phases of the special bombardment and times are shewn in Appendix II.
2. The general principles to be followed in arranging the barrages are :—
 - (a) To bring a very heavy fire to bear on the part to be attacked immediately.
 - (b) To bring a lighter, but fairly heavy fire on the next objective.
 - (c) To keep the remaining objectives under a still lighter fire.
 - (d) To prevent the enemy bringing up reinforcements from the rear or attacking our exposed flanks.
 - (e) To keep down the fire of hostile batteries.
 - (f) To keep the ground not immediately to be attacked under fire, *i.e.* the Fricourt Area.
The whole of the guns and howitzers of the Corps and Divisional Artilleries (including trench mortars) will be employed for the above purposes.

¹ The Appendices and tracings mentioned are not reproduced.

3. The fire will be as heavy as the amount of ammunition and consideration for the detachments allows.
Care must be taken to ensure that a sufficient amount remains in hand for further operations during the day.
The G.Os.C. R.A. of Divisions and G.O.C. H.A. will fix the amount required for each task.
4. When lifting, 18 pdrs. should search back by increasing their range, but Howitzers and Heavy Guns must lift directly on to their next objectives.
5. When barraging open ground fire should be in bursts, searching back as far as necessary, and not a continuous rate.
Wood and hollows beyond the actual line laid down for the barrage should be searched periodically.
6. G.Os.C. R.A. of Divisions will allot the tasks for their own batteries, but they will arrange to carry out the special bombardments laid down for the 4.5" Howitzers in the tracings.
They must arrange to keep sufficient guns ready to join in the special operation (attack on Fricourt).
7. The G.O.C. H.A. will arrange to carry out the tasks for the Heavy Artillery which are shewn on attached tracings.

They consist of :—

Concentrated bombardment :—

Tracing E.

Barrages :—Tracings H to Q.

Special Operation :—

Tracings R to T.

8. When and after the final barrage is established the G.O.C. H.A. will arrange for some of his batteries to search more distant routes, billets and likely places of hostile concentration for a counter-attack.
9. Arrangements must be made for a night barrage and by the use of frequent bursts of fire on known positions to prevent the enemy removing his guns.
The G.O.C. H.A. will arrange to deal with the more distant points.
10. If a re-bombardment of any point is ordered, a time for starting will be fixed and the bombardment will always last for half an hour from that time.
The last five minutes should be intense so that the infantry may have warning.
This would also apply to small places beyond the present objective which it might be considered advisable to take.
If a battery should receive its orders too late to fire for the full 30 min. it should commence as soon as possible but it must only fire for the shortened period ending 30 minutes after zero.
11. Watches must be carefully set to Signal time and the times laid down for the lifts strictly adhered to.

12. One Siege Artillery Group and one Heavy Artillery Group H.Qs. will be in direct telephonic communication with the 7th and 21st Divisional Artillery H.Qs. This is to enable Divisions to obtain the assistance of H.A. quickly if necessity arises and to prevent the necessity of applying to the B.G.H.A. when the fire of one or two batteries only is required.
13. The pre-arranged table of lifts must however be strictly adhered to up to the hour fixed for reaching the second objective (first day's operations), without reference to Corps H.Q. During this period (0.00 to 3 hr. 05) the Heavy Artillery must not be diverted from the targets allotted to them. Batteries which are not firing can, however, be utilized for special purposes during this period if required so to do.
14. The Schemes for the Divisional Artilleries and Heavy Artillery will be sent in by 9 A.M. on the 19th instant.
15. In order that fire may be continued without interruption in case of a break down in the Signal communications, a programme and time table of the tasks allotted to each battery will be kept at the battery and in each O.P. allotted to the battery. The programme and time tables will not be taken forward beyond the O.P.'s.

E. W. ALEXANDER,
Brigadier-General, R.A.
XV Corps H.Q.

14/6/1916.

THE SOMME, 1ST JULY 1916

30TH DIVISION OPERATION ORDER No. 19

BY MAJOR-GENL. J. S. M. SHEA, C.B., D.S.O.,
COMDG. 30TH DIVISION

June 21st, 1916.

1. (i) On "Z" day, hour zero (time of zero to be notified later), Maps
the 30th Division will assault the enemy's trenches. 1A, 5.
- (ii) On our right will be the 39th Division of the French XX Sketch
Corps, on our left the 18th Division. 18.
- (iii) Boundaries between this and neighbouring Divns. and between
brigades of this Division, are shewn on attached plan.¹
The Maricourt—Briqueterie road is inclusive to the French
and as far as A.10.d.2/6. The boundary between 30th and
18th Divisions is the Talus Boisé tram line as far as A.3.c.8/6,
thence the road due N. to Montauban, thence Northwards to
the trench running from S.27.c.8/6 to S.27.a.7/2 (inclusive to
30th Division).
2. Objectives are shewn on attached plan.¹ Objectives.
- (i) First objective—89th Bde. Trench from A.10.b.87.71 (ex-
clusive) to the point where this trench joins the Eastern face
of the German work at A.4.c.5/5 (exclusive).
21st Bde. from above point inclusive—A.4.c.29.90—A.3.d.
72.74—tram line at A.3.c.8/6.
21st Bde. will attack with its left on point A.3.d.01.21, and
thence on point A.3.d.5/8, and on attaining these points will
bomb to the left to get touch with 18th Division on the
tramway.
- (ii) Second objective—A.4.c.29.90—Montauban including en-
closures and trench running parallel to Village from S.27.b.5/5
to S.27.a.7/1.

¹ The "attached plan" is not reproduced. The stages of attack are described in the text, Chapter XIII.

(iii) These objectives are subdivided into 4 stages as follows :—

1st objective, 1st Stage—Capture of line shewn on attached plan as “ Inf. line 0.20 ”.

2nd Stage—Capture of line marked “ Inf. line 1.0 ”.

2nd objective, 3rd Stage—Capture of line marked “ Inf. line 2.30 ”.

4th Stage—The final objective of the 30th Division.

The four stages mentioned correspond to the Heavy Artillery Lifts (0.15, 0.55, 2.25) notified G.318 of 9th June,¹ and Appendix Z, G.466 June 13th.¹

3. (i) First objective will be consolidated,

(a) by the formation of Strong points in order given :—

21st Bde.		89th Bde.	
At once	(1) A.3.d.6/2.	At once	(1) A.10.a.4/6.
	(2) A.4.c.5/5.		(2) About A.10.d.15/60.
	(3) A.4.c.1/9.		(3) A.10.b.8/7.
	(4) A.3.d.5/8.		(4) About A.4.d.0/2 } ends of a
		Later	(5) About A.10.b.0/7 } new C.T.
			(6) A.10.a.58.24.

Garrisons 21st Bde. (1), 89th Bde. (1) and (2) : 1 platoon and 2 machine guns ; remainder 2 sections and 1 M.G. each, to be enlarged when opportunity admits.

(b) by connecting these points by a continuous line of trenches.

(ii) The system under which this consolidation is to be accomplished was laid down in Appendix “ A ” G.304 9th June, published to all concerned.¹

(iii) Second objective will be consolidated on a scheme to be made out by G.O.C. 90th Infy. Bde., who will keep strong reserves in hand to meet expected counter-attack.

The consolidation of the second objective will be accompanied by the 21st Bde. constructing 3 more strong points at

(5) A.4.a.4/7 as soon as possible.

(6) A.4.a.4/3 } later.

(7) A.4.a.0/6 }

and in due course by the preparation of the German C.T. running from A.4.c.29.90 to the S.E. corner of Montauban for use as a fire-trench.

Exploit-
ing of
successes.

4. (i) Immediately Montauban is in our hands, detachments of infantry with Lewis guns will be pushed out :—

(a) by 89th Bde. to the Briqueterie, arrangements for the necessary “ lift ” of Heavy Artillery being made through the Division.

(b) by 90th Bde. to the small work S.27.a.12.82.

(c) by 90th Bde. to a point on the spur about S.27.a.8/6.

The role of these detachments is (a) to secure points whence good observation can be obtained, (b) to command

¹ Not reproduced.

routes by which the enemy may try to withdraw his guns, (c) to act as outposts to the troops holding the new line and give early warning of counter-attack.

(ii) They will be supported as soon as possible by guns or sections of Field Artillery—see para. 7 (vii).

(iii) On capture of Montauban a portion of our artillery, both Heavy and Field, will advance to positions whence they can deal more effectively with the German second line.

5. (i) Capture of First objective is to be carried out by 89th and Method 21st Bdes., 89th on the right, 21st on the left. These Brigades of attack will be assembled on the night Y/Z in accordance with O.O.18. of first The assault will be made at zero, but the infantry will cross objective. our front parapet at zero under cover of our bombardment. Each brigade will be formed up with 2 battalions in line, the third in support and the fourth in reserve. At least 50 nettoyeurs with due proportion of officers will accompany each leading battalion to deal with successive lines of German trenches. A proportion of the Bde. Machine gun Coy. and Stokes Mortar Battery will be affiliated to each leading battalion, but these weapons will not actually be brought up into line until there is use or place for them.

(ii) Assault will take place under cover of:—

(a) 16 machine guns firing from selected sites.

(b) Lewis guns pushed forward into saps or wherever covering fire can be obtained.

(c) A hurricane Stokes Mortar bombardment (24 mortars) commencing zero minus 8 and maintained until zero, directed against machine gun emplacements A.10.d.2/4, A.10.c.5/6, A.10.c.4/7, and strong points A.10.c.1/7, A.O.b.8/5, A.9.b.2/7.

(d) Artillery fire which after 65 minutes intense bombardment will lift at zero on to the German third line.

(iii) Attack will proceed as allowed by Artillery "lift", the timing of the "lifts" having been arranged on the principle that it is better for the infantry to wait until our barrage lifts than for the latter to be lifted prematurely.

Divisional Artillery will work in with Heavy Artillery Lift Table, but will remain on the German third line until 0.6, that is, one minute longer than the Heavy Artillery and firing only H.E. during this minute. Similarly it will remain on the next barrage line until 0.16 instead of 0.15 and on the third line 0.56 instead of 0.55. This extra minute's fire will be arranged only so far as it does not interfere with troops on our flanks.

(iv) One smoke candle and one box of fuzee lighters per man will be carried by each leading battalion of 89th Bde. and the right battalion 21st Bde. These candles will be lit immediately the first objective ("Inf. line 1 hr. 0") has been attained, but not till then. They will be lit by orders of the officers on the spot, if the wind is anywhere between South or West. The

object of this smoke screen is to draw the enemy's attention off the move of the 90th Bde. from its assembly area.

1,200 smoke candles and 1,200 fuzee lighters will be issued to 89th Bde. and 600 of each to 21st Bde., under arrangements to be made by A.A. & Q.M.G.

Method of attack of 2nd objective.

6. (i) Capture of the Second objective is to be carried out by 90th Bde., which will have been assembled on the night Y/Z in accordance with O.O. 18, and kept in Divisional Reserve.
- (ii) At 1 hr. 0 the 90th Bde. will leave its assembly area and move to the line A.3.d.7/7—A.3.c.8/6, with its right on the track leading from A.15.b.2/4. Immediately the Heavy Artillery lifts its fire (2 hrs. 0), the 90th Bde. will attack Montauban, 2 battalions in front line, one in support, and one in reserve.
- (iii) The first task of this Bde. is to capture by 2 hrs. 30 the South Eastern outskirts of Montauban and the trench South of, and parallel to, the Village (Infantry Line 2.30 on plan).

To interfere with the enemy's observation from the East it is intended to raise a smoke barrage by the employment of a Special Brigade detachment armed with 4" mortars, which will be located previous to the assault in Done's Redoubt, and attached to 21st Bde.

The smoke barrage will be raised from a position about A.4.c.29.90 at 1 hr. 57 and maintained until 2 hrs. 25. It will not be raised unless the wind is favourable, i.e. either S. or S.W. The detachment 21st Bde. engaged as a carrying party will rejoin its Bde. immediately the mortars are in action.

- (iv) The second task of 90th Bde. is to capture the Village itself with enclosures which will be assaulted from the "Inf. line 2.30" with the least possible delay.
- (v) Great importance is attached to the creation of a heavy barrage of artillery, rifle, and machine gun fire to stop counter-attacks from Bernafay Wood or the Caterpillar Wood Valley. The capture of its second objective by 18th Division will be of great assistance as regards this.
- (vi) The advance of 90th Bde. will not absolve 21st Bde. from holding and consolidating the whole of the first objective. When Montauban is in our hands, 21st Bde. will obtain contact with 90th at Pt. A.4.a.4/7 (inclusive to 21st Bde.) and consolidate this trench for defence, facing East, vide para. 3 (iii).

Artillery Co-operation.

7. (i) The artillery attached to the Divn. is composed as follows:—

18 18-pr. batteries.
4 4.5" How. batteries.
3 2" T.M. batteries.

- (ii) It is divided into a Right Group (Lt. Col. The Hon. G. Stanley) with Hdqrs. alongside Hdqrs. 89th Bde. and a Left Group (Lt. Col. Ormerod) Hdqrs. alongside Hdqrs. 21st Bde. During the attack of the first objective, Right Group will support 89th Bde. and the Left Group 21st Bde. During the attack of the second objective, Right Group will support 89th

and 21st Bdes., while Left Group will support 90th Bde. When this change of co-operation takes place there will be a liaison officer from Right Group with 21st Bde., and one from Left Group with 90th Bde., Group Hdqrs. remaining at their initial stations for command purposes.

F.O.O's will proceed to Montauban immediately that Village is captured.

- (iii) Divl. Artillery is also divided into (a) batteries which will carry out the preparatory work, (b) 5 "Forward batteries" which will register on "Y" day under cover of another bombardment, but will only open fire for effect during the intense bombardment on "Z" day.
- (iv) The 4.5" batteries will be specially employed from zero minus 5 until 0.30 in counter-battery work, using lacrymatory shells. It is hoped to carry out at 0.55 and again at 1.55 another lacrymatory counter-battery bombardment.
- (v) After zero, 5 batteries will remain ready to deal with unexpected situations—C/150 and D/150 from the Right Group and A/150, A/151 and another battery from the Left Group.
- (vi) The rest of Divl. Artillery will work in with Heavy Artillery Lifts, except that the Divl. Artillery will remain one minute longer (using H.E. shell) on all the various barrage-lines but the initial one (enemy front line), off which every gun will lift at zero.

They will lift :—

- | | |
|---|--|
| <ul style="list-style-type: none"> (a) off enemy 3rd line (dotted on plan ¹)
and on to "Inf. line 0.20" at 0.6 (b) off "Inf. line 0.20" and on to "Inf.
line 1.0" at 0.16. (c) off "Inf. line 1.0" and on to "Inf.
line 2.30" at 0.56. (d) off "Inf. line 2.30" at 2.26. | } After which times no
guns will be shooting
our side of the line on
to which fire is lifted. |
|---|--|

The time-table is to be strictly adhered to.

- (vii) Six positions have been earmarked in the Carnoy—Cambridge Copse—Maricourt Valley and one Brigade of 18-prs. will be pushed forward into this area, immediately Montauban is captured. For these batteries as well as for the guns detailed to go forward in support of outlying detachments, see para. 4 (ii), teams will be ready from 1 hr. 0.
 - (viii) 30th Division will be in liaison during the attack with 31st Heavy Artillery Group (Lt. Col. Jenner) and can call direct on it for assistance.
 - (ix) If during the advance troops are checked and renewed bombardment on certain points becomes necessary, this re-bombardment will invariably last 30 minutes, the last 5 of which will be intense. On conclusion of the "re-bombardment", i.e. 30 minutes after its commencement, the infantry will renew the assault.
- The order will read "Re-bombardment 6 P.M." which implies infantry assault 6.30 P.M.

¹ Not reproduced.

- (x) Medium Trench Mortar batteries on completion of preparatory work will remain to advance as opportunity occurs.
- (xi) An extract from the Artillery Time Tables is attached, vide Appendix "A".

- Com- 8. For system of liaison and intercommunication, see Appendix
muni- "B".
cations.
Technical 9.

The C.R.E. will tell off 1 section Fd. Coy. R.E. and 1 platoon of Pioneers which, with 2 platoons to be detailed by 89th Bde., will make the "Strong point party" to follow the 89th Bde. He will also tell off 1 section Field Coy. R.E. to assist in the Briqueterie operation.

He will tell off another section Fd. Coy. R.E. and 1 platoon of Pioneers which, with 1 platoon to be detailed by 21st Bde., will make the "Strong point party" to follow the 21st Bde.

These "Strong point parties" will be under command of the Brigadiers whose brigades they are to follow. Their first duty is to construct Nos. 1 and 2 Strong Points 89th Bde. area, and No. 1 Strong point in 21st Bde. area, vide para. 3 (i) and attached plan—after which they will be available to assist in the completion of the other "Strong points" as ordered in that paragraph.

The C.R.E. will arrange for the maintenance of communication trenches within our own lines, the digging of new ones where necessary, and the repair for use as communication trenches of certain German trenches (vide G. 405 of 11th June).

He is also responsible for (i) preparation for use of the Mari-court—Montauban road (ii) formation of R.E. dumps other than the forward dumps which are under the Brigadiers (iii) issue of R.E. stores as necessary to the Brigades.

The scheme for employment of technical troops is set forth in Appendix "C".

- Observa- 10. There will be a XIII Corps Observation Post at A.14.d.0/5
tion. and a Divisional one at A.15.c.5/5, each connected up with its own Hdqrs. These posts are reserved for the Formations for which they are instituted.

- Intelli- 11. Special measures with regard to Intelligence—see Appendix
gence. "D".

- Ammu- 12. Each man will carry on his person 170 [4 battalions 220, see
nition. App. E.] rounds S.A.A. and 2 grenades.

Technical troops will also carry 2 grenades. Other arrangements as shewn in Appendix "E".

- Rations 18. (i) Every man will carry on his person :—
and water supply. The unexpended portion of the ration for "Z" day.
His iron ration.
21st and 90th Inf. Bdes. will carry rations for the next day as well.

- (ii) Every man starts with a full water bottle. Great importance is attached to supervision by regimental officers and N.C.O's of the use of water bottles.

- (iii) For system of supply see Appendix "F".

14. For instructions as to collection of prisoners and measures to deal with Stragglers, see App. "G". Police, Prisoners, and Stragglers.
15. (i) Behind the Regimental Aid Posts there are 4 Collecting Stations situated at :— Medical arrangements.
- (a) A.15.b.2/5 }
 (b) A.21.b.3/8 } on Maricourt Avenue.
 (c) A.14.b.6/4 }
 (d) A.20.b.7/9 } on West Avenue.
- Wounded will be taken there in motor ambulances by night only.
- (ii) Advanced Dressing Station at Billon Farm, F.24.c.6/0, whence they can be evacuated by day.
- (iii) Main Dressing Station is at Dives Copse, J.24.b.6/8.
- (iv) Walking wounded will be collected at the R.E. Dump N. of Bray, whence they will be conducted to I.19.b.2/9 on the Mat Double—Etinehem Road, thence carried to the Casualty Clearing Station at Heilly.
- (v) Medical personnel will be stationed at :—
- (a) R.E. Dump, N. of Bray.
 (b) Straggler's police posts.
 (c) Corps Prisoner's Enclosure.
 (d) To police certain Ambulance traffic routes.
16. Divisional Salvage Company will form the nucleus of an organization for clearing the battlefield. Clearing the
 Brigade Commanders will ensure that empty carts returning from the front take away as much as possible. Battle-field.
 Captured booty will be sent via Refilling Point to Railhead.
 Divl. Artillery will have teams ready at 3 hrs. 0 for removal of captured guns, which will be taken to the Ordnance Store, Etinehem.
17. For detail of working parties to be found from Bdes. see Appendix "H". Working parties.
18. For stores to be carried forward by units, see Appendix "J". Stores to be carried.
19. For situation of all Divl. Troops at or behind Bray, see Appendix "K". Location of Divl. Troops.
20. Messages intended for Battle Headquarters will be addressed :— Messages.
- 30th Div.
 21st Bde.
 89th „
 90th „
- Other messages will be addressed :—
- 30th Div. "Q" (at Etinehem Chateau).
 Staff Capt. 21st Bde. (in Brigade Office, Bray)

Staff Capt. 89th Bde. (in Brigade Office, Bray)

„ „ 90th „ (at Etinehem Chateau).

Messages for Q will be addressed “XIII Corps 2nd Echelon”,
“30th Division 2nd Echelon”, &c.

Great care is to be taken as regards the address of messages,
so as to prevent routine work reaching Battle Headquarters.

The whole Divl. Artillery and Divl. Engineer Staffs will be
found at Divl. Battle Headquarters.

The A.D.M.S. will be found at “Q” office.

Battle
Head-
quarters.

21. Battle Headquarters :—

XIII Corps	.. .. .	Chipilly.
XIII Corps Heavy Arty.	.. .. .	L.14.b.2/2.
31st Heavy Arty. Group	.. .. .	L.12.a.25.75.
30th Divn.	.. .. .	L.16.b.5/2.
89th Infy. Bde.	.. .. .	A.21.b.3/2 (later Chateau Redoubt, Maricourt).
21st „ „ }	.. .. .	{ Copse B, A.21.a.3/5.
90th „ „ }	.. .. .	{ (later A.15.a.4/7).
XX French Corps	.. .. .	L.18.a.5/5.
39 ^{me} French Divn.	.. .. .	Brewery Redoubt, Mari- court, A.22.a.9/5.
77th French Brigade	.. .. .	A.16.b.7/8.
18th Divn.	.. .. .	L.16.b.3/7.
55th Infy. Bde.	.. .. .	A.25.d.6/5.
9th Divn.	.. .. .	Grovetown.
“A” Infy. Bde.	.. .. .	Billon Wood Valley.
“B” „ „	.. .. .	Grovetown.

W. H. F. WEBER,
Lieut. Colonel, General Staff.

Issued to Signals at 7.0 P.M.

Extract from Divl. Artillery Time Tables.

9 wire-cutting 18-pr. batteries 5 Forward (9th Div.) 18-pr. batteries 4 other 18-pr. batteries 3 2" T.M. batteries 4 4-5" How. batteries	0 minus 65 - 0 " " 0 minus 65 - 0 minus 5	Front line trenches. Support line trenches Selected communication trenches Front line and wire. Selected localities, Front support and third lines.	
4 4-5" How. batteries	0 minus 5 - 0.30	Bernafay Wood and Trones Wood, etc.	Lacrymatory shell. D/150 to be ready to help 89th Bde.
5 Forward batteries (A, B, C, D, E, 9th Div.)	0 - 0.56	Wire-cutting " Infantry line 1.00 "	Last minute H.E. only.
4 18-pr. batteries	0 - 0.56	Wire-cutting " Infantry line 1.00 "	C/150 ready to help 89th Bde. A/150 } ready to help A/151 } "F" 9th Div. } 21st Bde. Last minute H.E. only.
9 18-pr. batteries	0 - 0.6 0.6 - 0.16 0.16 - 0.56	German 8rd line (dotted on plan) " Infantry line 0.20 " " Infantry line 1.00 "	3 rounds per gun per minute. Last minute H.E. only to give infantry warning of time of assault.
1 4-5" How. battery 3 " batteries	0.30 - 2.26 0.30 - 0.56	Briquerie Glatz Redoubt.	
10 18-pr. batteries Left Group 4 " " Right " 3 " " " 3 4-5" How. batteries	0.56 - 2.26 do. do. do.	" Infantry line 2.30 " Montauban, with H.E. Western edge of Bernafay Wood. Montauban.	
Whole Divl. Artillery	2.26 - 2.30 After 2.30	Barrage N. of Montauban.	Prepare to create barrage N. & E. of Montauban.

System of Liaison and Intercommunication.

Liaison. At XIII Corps Hdqrs. Lieut. Tassart, from French XX Corps.
 At Hdqrs. XX Corps, Captain J. V. Williams, 17th Manchester Regt. from XIII Corps.
 At Divl. Hdqrs. Lieut. Raoul-Duval, French Mission.
 A liaison officer from XIII Corps Heavy Artillery.
 Capt. Ravenscroft, 18th K.L.R., representing 21st Infy. Bde.
 Capt. Malin, 17th Manchester Regt., representing 90th Infy. Bde.
 Lieut. Lewis, 17th K.L.R., representing 89th Infy. Bde.

30th Division is connected with 39^{me} French Divn. at Brewery Redoubt, Maricourt.

89th Bde. will be represented at Hdqrs. 77th French Brigade and Hdqrs. 21st Bde.

21st Bde. will be represented at Hdqrs. 89th and 55th Bdes.

30th Divl. Artillery will be connected with 39^{me} French Divl. Artillery.

All Artillery Groups will be connected with Groups on either flank.

Alternative methods of communication.

- (i) A lamp station has been established at Square Wood (Bois Carré) S. of the Somme (L.35.b.4/5) whence communication can be obtained to 89th Bde. Hdqrs., Copse B, Divl. Battle Hdqrs., and Etinehem, all of which will be continuously manned.

Advanced Divl. Lamp (receiving) Station, A.14.d.7/3, where messages can be taken from A.15.a.4/8 (21st and 90th), Machine Gun Wood (89th), German's Wood, A.3.d.5/8, and points on the S. side of Montauban. This Advanced Divl. Lamp Station will be continuously manned. All ranks will be informed of the positions whence messages can be sent to the Advd. Divl. Lamp Station.

- (ii) 24 light Morse discs and a limited number of electric torches are in possession of every unit.
- (iii) Runners will be employed in pairs.
- (iv) There will be an Advanced Wireless Station at Copse B and Talus Boisé (for 30th Divn.) and A.19.a.5/8 (for 18th Divn.), in communication with a Wilson Contact set at L.5.b.3/6.
- (v) Pigeons will be issued to all Bdes. for work from advanced positions to the lofts at Etinehem or Corbie. Baskets will be marked.

Communication with aeroplanes & Kite balloons.

- (i) Flares* will be carried by officers, N.C.O's, and selected men at the rate of 220 per battalion in first instance. Each Brigade will be issued with 1,500.

They will only be used by order of a company or platoon commander and only from the front line.

* Not more than 300 flares per brigade are available.

When used they will mean "We are here and so far as we know we are the leading infantry or within 50 yards of the leading infantry".

Like flags they will be used only

- (a) on reaching "Infantry line 0.20" by 21st & 89th Bdes.
 "Infantry line 1.00" by 21st & 89th Bdes.
 "Montauban Village" by 90th Bde.

(b) if checked before reaching the line given.

Flares will be lit in series of 3, each flare 3 or 4 paces from the other and at $\frac{1}{4}$ minute intervals.

- (ii) Mirrors will be used to attract the attention of aeroplanes, but only on the order of a company or platoon commander.

Both flares and mirrors are intended chiefly as a means for aeroplane observers to obtain a general contour of the front line of our infantry.

They should prove of assistance to our artillery.

- (iii) Special signal lamps and signalling screens will be used for communication between brigade and battalion headquarters and contact aeroplanes; 3 aeroplanes will probably be available in the Corps for this purpose. XIII Corps contact plane is known by a broad black band under the wing and on streamers.

These lamps (helio by day) will also be used between battalion and brigade headquarters and the Corps Kite balloon.

The Kite balloon is engaged principally with artillery by day and will be unable to accept many messages, but by night should be able to accept freely.

Code messages to aeroplanes are as follows:—

Bn. or Bde. call letter.	Hd. Qrs. are here
Succession of Ns	Short of amm.
" " Ys	Short of grenades
" " Os	Barrage wanted
" " Hs	Lengthen range
" " Xs	Held up by M.G. fire
" " Zs	Held up by wire.

In addition the following will be used between aeroplanes and H.Q. of formations when using wireless:—

FF	Our own Inf.
MM	Flares or mirrors
L4	General call.

- (i) Every infantryman in the Division will wear a yellow patch on his pack and a tin disc, shiny side outwards. Co-operation with artillery.
 Observers must be cautioned that these patches and discs are worn by all infantry; they therefore do not mark (like flags, flares, and mirrors) the front line.

- (ii) Every company and every platoon will carry one coloured flag to help shew its position to the artillery, if in the front line.

These flags will mean nothing unless waved, and they are only to be waved by the front line. Waving means "We are here and so far as we know we are the leading infantry or within 50 yards of the leading infantry".

80th Div. flags are blue & yellow, halved diagonally.

18th ,, ,, red & yellow ,,

9th ,, ,, red & yellow quartered diagonally.

They will be used in the same way as flares, see sub-para. (i) of the previous paragraph—i.e.

(a) on reaching “ Infantry line 0.20 ” by 21st & 89th Bdes.

“ Infantry line 1.00 ” by 21st & 89th Bdes.

“ Montauban Village ” by 90th Bde.

(b) if checked before reaching the line given.

DISPOSITION OF R.E. AND PIONEERS

Ampliation.	Strength, etc., of Parties.	Place of Assembly.	Objective.	Remarks.
1. STRONG POINT PARTIES.				
89th Inf. Bde.	(a) 1 Sec. 200th Fd. Coy. R. E. 1 platoon Pioneers 2 platoons Infantry	Trenches in Maricourt (N) (East Face and part of South Face of Chateau Keep - 140' x of trench) Assembly Trench X X	To prepare "Strong points" at A.10.d.1/6. and A.10.a.4/6.	To assemble and move under orders from 89th Bde.
21st Inf. Bde.	(b) 1 Sec. 202nd Fd. Coy. R. E. 1 platoon Pioneers 1 platoon Infantry	Copse Valley	To prepare "Strong points" at A.3.d.6/2 Defence of Montauban Vil- lage	To assemble and move under orders from 21st Bde.
90th Inf. Bde.	(c) 201st Fd. Coy. R. E. 2 platoons Infantry			To assemble with 201st Fd. Coy. by 8 P.M. "Y" day and move under orders from 90th Bde.
2. COMMUNICATION TRENCH PARTIES.				
Division . . .	(a) 1/3 Coy. Pioneers	Trenches in Maricourt (E. face of Napier's Redoubt -300' x of trench)	To open communication trench from Sap A.P.3. to German's Wood. (Stanley Avenue)	To move as detailed in separate instructions
	(b) 1 Coy. Pioneers	do.	To open communication trench from Sap A.P.4. to enemy's trenches and on- wards (Maricourt Avenue)	
	(c) 1/3 Coy. Pioneers	"U" Works North of Peronne Road	To open communication trench from Sap No. 6 (A.9/8) (Support Avenue) to enemy's trenches and onwards	
	(d) 1/3 Coy. Pioneers	"U" Works North of Peronne Road	To open communication trench from Sap No. 5 (A.9/4) (West Avenue) to enemy's trenches and on- wards	To move as detailed in separate instructions, APP. C.2.
3. ROAD PARTIES.				
Division . . .	(a) 1 Sec. 200th Fd. Coy. R. E. 1 platoon Infantry	Maricourt trenches. (South face of Napier's Redoubt - 200' x of trench)	Roads and bridges North of Peronne Road	Infantry to assemble by 8 P.M. "Y" day.
	(b) Headquarters & Sec. A.T. Coy. R. E.			
4. TRENCH MAINTENANCE PARTIES.				
	(a) 1 platoon Pioneers	Stanley & Maricourt Avenues	Maintenance Stanley and Maricourt Avenues	Appendix C.3.
	(b) 1 platoon Pioneers	Support & West Avenues	Maintenance Support and West Avenues	
5. DIVISIONAL RESERVES.				
	200th Fd. Coy. (less 2 Secs.) 202nd Fd. Coy. (less 1 Sec.) 2 platoons Pioneers	Copse Valley Trigger Wood Valley Copse Valley	Divisional Reserve.	

Instructions for the forward Communication Trench Parties.

1. The O.C. 11th S. Lancs. will be responsible for seeing that the following parties required for this work are detailed and equipped * and that they are at their places of assembly at 8 P.M. on "Y" day.
 - (a) $\frac{1}{2}$ Coy. to open communication trench from Sap A.P.3 to German's Wood (Stanley Avenue).
 - (b) 1 Coy. to open communication trench from Sap A.P.4. to enemy's trenches and onwards (Maricourt Avenue).
 - (c) $\frac{1}{2}$ Coy. to open communication trench from Sap No. 6 (A.9/3) (Support Avenue) to enemy's trenches and onwards.
 - (d) $\frac{1}{2}$ Coy. to open communication trench from Sap No. 5 (A.9/4) (West Avenue) to enemy's trenches and onwards.
2. He will also see that the following instructions are communicated to the O.C. of each party.
 - (i) All parties to move as follows :—
 - (a) and (b) parties, the latter leading, to move up to our own front line trench via Stanley Avenue as soon as the Supporting battalion of 89th Infy. Bde. has left its Assembly trenches, the leading man to wheel to the left on arrival at our own front line trench. Both parties should then be opposite the Sap they are to deal with. They should move out to their objectives as soon as the Supporting battalion has crossed the enemy's support line trench.
 - (c) and (d) parties, the latter leading, to move up to our front line trench via Support Avenue as soon as the Supporting battalion of 21st Infy. Bde. has left its Assembly trenches, the leading man wheeling to the left on arrival at our own front line trench. Both parties should move along the front line until opposite the Saps they are to deal with. They should move out to their objectives as soon as the Supporting battalion, 21st Infy. Bde., has crossed enemy's support line.
 - (ii) Work on the communication trench to be made between the head of the Russian Saps and the enemy's first line, to be commenced at both ends.
 - (iii) On completion of these trenches each party is to prolong its trench into the enemy's lines along existing trenches as shewn on the attached map. The officer in charge each party should reconnoitre the enemy's trench he is to deal with before his party complete their first task.

* Each man to carry pick and shovel and 6 sandbags.

Appendix "C" 3.

Instructions for the Communication Trench Maintenance Parties.

1. The O.C. 11th S. Lincs. will detail the following parties equipped as shown,* and see that they are properly distributed in their respective trenches on the commencement of operations :—
 - (a) 1 platoon for maintenance of Stanley & Maricourt Avenues.
 - (b) 1 platoon for maintenance of Support and West Avenues.
2. He will also be responsible for the collection of the following stores at the places noted ; these to be at the disposal and in charge of the parties noted in para. 1.
 - (a) In Napier Keep.
 - 1,000 sandbags.
 - 10 rolls wire netting.
 - 50 sheets expanded metal.
 - 50 7' pickets.
 - 100 long angle iron posts (if available).
 - 2 coils plain wire.
 - 30 pitprops.
 - 20 planks 9" x 3".
 - (b) In "U" Works.
 - 1,000 sandbags.
 - 10 rolls wire netting.
 - 50 sheets expanded metal.
 - 50 7' pickets.
 - 100 long angle iron posts (if available).
 - 2 coils plain wire.

These stores are to be provided from current issues from the Divisional Dump.

3. He will be responsible for explaining to all ranks of these parties that on no account are they to move along the trenches for which they are responsible, in the opposite direction to which the trenches are marked to be used. Should they have to move in the opposite direction, they must leave the trench and go across country.

* Each man a shovel, every 4th man a pick. Each platoon to have 500 sandbags dumped at suitable points outside the Avenues.

Appendix "C" 4.

Instructions for the O.C. 238th Army Troops Coy. R.E.

1. You will see that your party is in its place of assembly at the appointed hour, equipped as per list "S".

2. You will tell off parties for the maintenance of the following road and tracks :—
 - (a) Road from A.21.b.2/8 to A.15.d.40.85 and the track (and bridges over the trenches) marked out to Oxford Copse.
 - (b) A 6' footpath should also be made across our trenches with trench bridges from the 4 Willows Water point to our front line trench.
 - (c) A 6' footpath across our trenches to the W. of the Fleche back to the Water point in Talus Boisé. Trench bridges to be used for this path.
 - (d) Maintenance of the Maricourt—Montauban Road from Peronne Road to enemy's front line trench (exclusive).

These to be open for traffic as soon as the situation permits. The Maricourt (High St.)—Montauban Road as far as our front line trench, inclusive, to be open for wheel traffic. A report regarding this road to be rendered to C.R.E. by 10 P.M. "Z" day.
3. You will see that tracks over our own trenches are clearly marked with signboards painted white.

Appendix "D".

Special Measures to be taken with regard to Collection of Intelligence.

1. Brigades will take steps to obtain, and will pass on to Divl. Hdqrs., the earliest possible information as to units (Regiment, Battalion, and Company) to which enemy dead and prisoners belong. The early arrival of this information at G.H.Q. is of the first importance.

It is not to be delayed pending search for more detailed information.
2. It is the special task of all Intelligence Officers to obtain information as regards the enemy and to pass it on.

Battn. & Battery Hdqrs. should be located and searched at once. The positions of Battn. Hdqrs. at Montauban are S.27.d.65.60 and S.28.c.2/5.

Information and documents it is particularly desired to obtain :—

 - (a) Position of hostile batteries.
 - (b) Telephone message books.
 - (c) Ammunition States.
 - (d) Maps and sketches.

Prisoners from Pioneers and Gunners are especially desirable.
3. Officers and men will be separated at once on capture.

All prisoners will be searched for documents without delay.
4. Two Special "Intelligence" men will be attached to each of the first, second, and third battalions. They will wear a white or yellow arm-badge marked "Intelligence" and carry a sack to contain letters, documents, and maps.

They will accompany the O.C. Nettoyeurs in the case of the leading battalions, and Battn. Hdqrs. in the case of the third battalions.

Their duty is to collect documents out of dug-outs, off dead officers, etc., and send them back with prisoner's escorts.

These sacks will be labelled with a white or yellow band marked "Intelligence".

If the "Intelligence" men or any man carrying one of these sacks becomes a casualty, it is the duty of any officer to order another man to take the sack.

The G.S.O.(3) of the Division will arrange to provide the necessary sacks, properly labelled, and arm-bands for the "Intelligence" men, to all Brigades.

5. The sacks will be taken to Bronfay Farm where there will be a Special D.R., detailed by O.C. Signal Coy., also wearing an "Intelligence" arm-band, who will take the documents to the Joint Divl. Collecting Station at L.14.b.8/8 (Grovetown).

Appendix "E".

System of Supply of Ammunition.

There is a large dump at the gun positions.

Artillery.

There is a dump at "Ammunition Refilling Point", Etinehem.

Ammunition comes up by barge and is taken by the Divl. Ammunition Column to Battery Dumps.

Should the barge break down, ammunition will be brought in lorries to the Ammunition Refilling Point which will in that case be located at K.18.c and be taken thence in the usual way.

From front to rear the echelon of supply is as follows :—

S.A.A. &
Grenades.

- (i) On the man 170 or 220 rounds (see App. "J").
- (ii) Forward Dumps near our front line at
89th Bde. . . . A.16.b.1/7, A.16.a.5/7, A.15.b.3/3.
21st & 90th Bdes. A.9.c.9/8.
- (iii) Bde. Reserve Dumps at
89th Bde. Maricourt Chateau, to be refilled from Napier's Redoubt,
21st & 90th Bdes. A.15.a.4/9, to be refilled from Cambridge Copse,
to be refilled under Bde. arrangements from (iv).
- (iv) Advanced Divl. Dumps at
(a) Napier's Redoubt and Cambridge Copse, to be refilled under Divl. arrangements.
(b) "U" Works which keeps Cambridge Copse filled.
- (v) Advanced Divl. Dumps are to be refilled at night by D.A.C. from Ammunition Refilling Point.

- (vi) Grenades are stored and detonated at Bray (Divl. Grenade Store) and Etinehem, and forwarded thence detonated to Advanced Divl. Dumps.

T.M.
Ammu-
nition.

Heavy T.M. 400 rounds—as much as time permits with battery, remainder at Maricourt Church.

Medium T.M. 200-500 * rounds with the battery, remainder at Maricourt (Church St.).

Stokes Mortar. 1,000-2,000 with the battery, remainder at Bde. Reserve Dumps. Total amount 500 per mortar.

Every battery provided with 64 Tantalus Carriers for use after advance.

* Varies with different batteries. Total amount 2,000 rds. per battery.

Appendix "F".

Rations & Water Supply.

- Rations. (i) Every man will carry his iron ration on his person, in addition to the unexpended portion of rations "Z" day.
The 21st & 90th Bdes. will carry rations for the next day as well.
- (ii) About 20,000 rations are dumped at :—
Napier's Redoubt, Maricourt for 21st Bde.
Chateau " " 89th "
A.21.b.9/5 Redoubt for 90th Bde.
- Troops N. of Peronne Road will be fed from Napier's Redoubt. These dumps will be under a Supply Officer and troops will be rationed nightly from them, using sacks. The dumps will be refilled by 1st Line Transport from Bray at night.
- (iii) 1st Line Transport will get rations daily from the Divl. Train in the usual way.
- (iv) Units S. of Peronne Road will be fed as at present.
- Water. (v) Every man starts with a full water-bottle. Great importance is attached to supervision by regimental officers and N.C.O.'s of the use of water-bottles.
- (vi) It is hoped there will be Water Points ready at :—
Talus Boisé (A.9.c.2/1).
Willow Trees near Machine Gun Wood (A.15.b.5/4).
Copse Valley (A.20.d.3/5).
There are tanks in Chateau Redoubt, Maricourt, and two 400-gallon tanks on trucks on Metre Gauge railway at Carnoy.
Tanks are also being placed in assembly trenches.
- (vii) Carriage from Water Points by petrol tins and on mules.
8 mules per Battn. carrying 12 gallons each (6 petrol tins).

400 petrol tins per Bde. for hand-carriage and storage in addition to the 48 carried on mules. The tanks now in the trenches can be carried forward under Bde. arrangements.

- (viii) If supply fails owing to damage of pipes by shell fire, supply will be by water carts as far as Maricourt and "U" Works, thence forward by hand.

Appendix "G".

Police, Prisoners of War, and Stragglers.

Brigades will be responsible for their own areas including cap- Policing
tured ground as far back as the line Southern edge of Napier's commu-
Redoubt—Southern edge of Done's Redoubt—Northern edge of nication
Cambridge Copse—Battle Street, all exclusive. trenches.

The Division will take responsibility from the above line inclusive back. For this purpose a Troop of Northumberland Hussars will be available, and special instructions have been issued to the O.C. Troop.

Brigades will be responsible as far back as Done's Redoubt and Prisoners
the Southern edge of Talus Boisé. of War.

1 platoon of Cyclists will be stationed at each of the localities stated below :—

(a) Done's Redoubt.

(b) A.14.b.9/5.

The routes for prisoners to be taken will be :—

(a) From zero till 2 hrs. 0 direct from each of the above localities by Billon Valley and L.11.c.7/4 to the Divl. Collecting Station at L.14.b.8/8 where they will be taken over by the A.P.M.

(b) After 2 hrs. 0 the Talus Boisé party will conduct prisoners along Battle St. if possible to Done's Redoubt and thence as before.

The two platoons must combine their efforts as far as possible to economise men. Escorts should not exceed 10%.

The O.'s C. platoons will warn Divl. Hdqrs. through either Bde. Hdqrs. of the despatch of a party of prisoners, giving the number of their regiment.

Officers and men will be separated at once, and all ranks searched for documents before conducted to the rear.

Escorts having handed over their prisoners at L.14.b.8/8 will immediately return to Done's Redoubt.

Brigade and Commn. Trench Police will take all possible steps to Strag-
turn back stragglers. glers.

The A.P.M. is responsible for police supervision from the line Trigger Wood—Western edge of Ceylon Wood inclusive, to the rear.

A Divl. Straggler's Collecting Station is at L.14.b.8/6.

Arrangements are in charge of A.P.M., under whose charge will Road
be 1 platoon of Cyclists. Control.

Appendix "H".

Working Parties etc. to be found by Brigades
for Operation purposes.

- 21st. 1 Platoon to 202nd Fd. Coy. R.E. for "Strong Points"—see App. "C".
- | | | |
|--|---|---|
| 4 men to C.R.E. to work pumps at Water Point
10 " " " " trolleys
2 " " " " pump in "U" Works | } | 21st Bde. to arrange assembly with C.R.E. |
|--|---|---|
- 1 platoon to join 4" Stokes battery in Done's Redoubt (W. of Maricourt Avenue) by 7 P.M. "Y" day.
- 1 officer & 4 men to join 9th Div. Hdqrs. as guides by 6 P.M. "Y" day.
- 2 N.C.O.'s or men to act as "Intelligence men".
- 1 officer & 15 men detonating grenades at Etinehem—assembly orders to be given by "Q".
- 89th. 2 Platoons to 200th Fd. Coy. R.E. for "Strong Point party"—see App. "C".
- 1 Platoon to 200th Fd. Coy. R.E. for Road party—see App. "C".
- 4 men to C.R.E. for working pump—89th Bde. to arrange assembly with C.R.E.
- 1 officer & 4 men to join 9th Div. Hdqrs. as guides by 6 P.M. "Y" day.
- 2 N.C.O.'s or men to act as "Intelligence men".
- 1 N.C.O. & 15 men handling ammunition at Adv. Div. Dump "U" Works.
- 90th. 2 Platoons to 201st Fd. Coy. R.E., Defence of Montauban—see Appendix "C".
- 1 officer & 4 men to join 9th Div. Hdqrs. as guides by 6 P.M. "Y" day.
- 2 N.C.O.'s or men to act as "Intelligence men".
- 1 N.C.O. & 15 men handling ammunition at Adv. Div. Dump at "U" Works.

Carrying parties will be demanded in the event of an advance of the Medium T.M.B.'s by the Battery Commanders from the Infantry Brigade with which they are detailed to co-operate.

Such carrying parties should consist of a senior N.C.O. and not less than 50 rank & file.

Appendix "J".

Extra stores to be carried in accordance with these Orders.

Every man. Rations (a) unconsumed portion "Z" day ration and iron ration.
 Ammunition (b) 170 rounds.
 Grenades 2
 Sandbags 4
 Pick or shovel or entrenching tool.
 Yellow patch.
 Shiny disc.
 2 gas helmets.
 Water-bottle.

By bombers. 10 grenades, but only 50 rounds of ammunition.
 Throwers not to carry rifles.

2 leading battalions 89th and right-hand leading battalion 21st—
 1 smoke candle per man with box of lighters.

Strong Point Parties—R.E. material.

Lamps, screens and ground sheets, by Battalion Headquarters as
 available, for signalling to aeroplanes.

Flares—250-300 per Bde.

Vigilance mirrors—90 per battalion.

Light Morse discs—24 per battalion.

A few electric torches.

Wire-cutters } as many as are issued.
 Knobkerries }

Every company and every platoon—1 flag.

Notes.—(a) 21st and 90th Bdes. to carry 1 extra day's rations.

(b) 2 battalions (of each of 21st and 90th Bdes.) to carry
 50 rounds extra.

Appendix "K".

Location of 2nd Echelons and Divisional Troops.

"Q" Office, A.D.M.S., A.D.V.S., A.P.M. and Salvage
 Coy. Officer Etinehem.

1st Line Transport, 21st Inf. Bde., Gully S.W. of Bray, L.20.b.8/7.

1st " " 89th " " do. L.20.b.0/5.

1st " " 90th " " do. L.20.b.4/8.

1st " " 11th S. Lancs. R. do. L.20.b.0/6.

Ammunition Refilling Point L.25.a.6/5 (if barge supply fails, this is
 transferred to K.18.b.2/8).

Artillery Wagon lines
1, 2 & 3 Secs. D.A.C. (A Echelon) { Bois des Tailles. Camp Com-
mandant's Office at No. 10 Camp,
K.29.a.6/7.

No. 4 Section, D.A.C. (B Echelon)—Sailly Laurette.

30th Divisional Train—K.35.d.9/6.

Supply Refilling Point—K.35.b.7/5.

96th }
97th } Field Ambulances (Tent Divisions) Dives Copse, J.24.b.6/8.
98th }

Divisional Supply Column : on Bray—Corbie Road, J.19.b.7/3.

Mobile Veterinary Section : Corbie.

Advanced Mobile Veterinary Section : K.29.b.3/5.

THE SOMME, 1ST JULY 1916

7TH DIVISION. ARTILLERY INSTRUCTIONS
FOR FORTHCOMING OPERATIONS AND
EXPLANATORY NOTES

Note:—The date of the assault is referred to as “Z” day. Days preceding “Z” day will take the letters in reversed alphabetical order, *e.g.* “Y”, “X”, “W”, etc. This will apply in all future operation instructions.

Maps
1A, 7.
Sketch
20.

1. (a) In conjunction with the French, who are operating from Maricourt southwards, the Fourth Army will assume the offensive on “Z” day, and will establish as a primary objective a line from Montauban through Pozières and northwards passing to the south of Mametz Wood.
- (b) The portion of this line south and south-west of Mametz Wood is allotted as the objective of the XVth Corps.
The attack will be developed to the north and south of Fricourt Village and Fricourt Wood by the 21st and 7th Divisions respectively, with the object of isolating the triangle formed by these localities, which will be afterwards dealt with in a subsidiary operation.
- (c) The task of the 7th Division is to clear the trenches in front and seize and occupy the spur from the track at S.25.b.58.32 to Willow Avenue at X.29.b.5.6.
- (d) Immediately on the right of the 7th Division the left Brigade of the 18th Division will advance simultaneously and prolong the above-mentioned line towards Montauban. The left of the 18th Division will be in the trench running from S.25.b.36.90 to S.25.b.90.45.
- (e) On the left the 21st Division, advancing on the north side and clear of Fricourt Village and Wood, will join hands with the 7th Division at Willow Avenue, X.29.b.5.6, and prolong the line northwards through the Quadrangle towards Contalmaison.

Boundaries.—The boundary between our right and the 18th Division will be from F.12.c.3.9 to F.6.a.75.15, track at

F.6.a.8.9, thence along track running north-north-east to S.25.b.58.32.

The dividing line between the 7th and 21st Divisions will be Willow Avenue Stream.

2. (a) Distribution.

The 7th Division will be distributed as follows :—

On the right—the 91st Infantry Brigade from F.12.c.3.9 to F.11.d.2.7. In the centre—the 20th Infantry Brigade from F.11.d.2.7 to F.10.c.65.35 (east end of Bois Français craters).

On the left—the 22nd Infantry Brigade, less 2 battalions and two sections Machine Gun Company, F.10.c.65.35 to F.9.a.62.58.

(b) Main Attack.

The main attack will be carried out by 91st and 20th Infantry Brigades.

(1) The dividing line between the 91st and 20th Infantry Brigades will be—from our trenches at point F.11.d.2.7 to the road junction F.5.c.45.35 in Mametz immediately south of the church, thence along the road running north past the Church to the northern outskirts of the village, thence to the eastern edge of Bunny Wood.

(2) The attack of the 91st Infantry Brigade will be divided into three phases, the completion of each phase being marked by the capture and consolidation of a definite objective.

The first objective will be the seizure of Bucket trench, Bulgar Alley to Danzig Alley, Danzig Alley and the northern and north-eastern edge of Mametz.

The second objective will be Fritz trench, Valley trench, and Bunny Alley.

The third objective will be the whole of the final objective allotted to the Division.

(3) The 20th Infantry Brigade will form a defensive flank facing north-westwards to cover the advance of the 91st Infantry Brigade and will seize the north-eastern outskirts of Mametz, Orchard Alley to its junction with Apple Alley, Apple Alley to our front trenches.

(c) Subsidiary Attack.

The 22nd Infantry Brigade will clear the German trenches north of Bois Français at an hour to be decided later when the main attack has reached its final objective. This operation will take place in conjunction with 2 battalions of the 50th Infantry Brigade who will clear Fricourt Village and Wood.

3. Artillery.

(a) A preliminary bombardment will be carried out on “U”, “V”, “W”, “X” and “Y” days. Wire will be cut during all five days.

From the night U/V, to the night Y/Z, a continuous bombardment will be carried out.

2” Trench Mortars will be used for wire-cutting on “U” day and afterwards as required.

240 m.m. Trench Mortars and 3” Stokes Mortars will be used as required from “V” day onwards.

(b) During the advance of the Infantry a barrage of Artillery fire will be formed in front of the infantry according to the timings shown on the tracings¹ issued to those concerned.

The lines shown on the tracings¹ indicate the nearest points on which guns will fire up to the hour indicated. At the times shown heavy guns will lift their fire direct to the next barrage lines. The Divisional Artillery will move their fire progressively at the rate of 50 yards a minute.

Should the infantry arrive at any point before the time fixed for the barrage to lift, they will wait under the best cover available and be prepared to assault directly the lift takes place.

(c) The Divisional Artillery will be grouped as follows after the completion of the preliminary bombardment:—

“A” Group, 14th Brigade R.H.A.

H.Qrs. with 20th Infantry Brigade Hd. Qrs.

“F” Battery R.H.A.

“T” Battery R.H.A.

B/81 Battery (81st Brigade, 17th Division) attached.

C/81 Battery (81st Brigade, 17th Division) attached.

D/14 Battery R.H.A.

(20—18-prs. 4—4.5” Howitzers.)

“B” Group, 22nd Brigade R.F.A.

H.Qrs. with 91st Infantry Brigade H.Qrs.

104th Battery R.F.A.

105th Battery R.F.A.

106th Battery R.F.A.

A/81 Battery R.F.A. (17th Division) attached.

35th Battery R.F.A. (Howitzer).

(22—18-prs. 4—4.5” Howitzers.)

“C” Group, 35th Brigade R.F.A.

H.Qrs. with 22nd Infantry Brigade H.Qrs.

12th Battery R.F.A.

25th Battery R.F.A.

58th Battery R.F.A.

31st Battery R.F.A. (4.5” Howitzers).

(18—18-prs. 4—4.5” Howitzers.)

Reserve Group. Headquarters Gibraltar.

A/80 Battery R.F.A. (17th Division) attached.

B/80 Battery R.F.A. do. attached.

C/80 Battery R.F.A. do. attached.

D/80 Battery R.F.A. (Hows.) do. attached.

(12—18-prs. 4—4.5” Howitzers.)

4. Instructions as to Re-bombardment.

(a) If any point or part of the enemy's lines holds up our Infantry advance to such an extent that it is necessary to bombard again that portion of the enemy's defence, application for re-bombardment will be made to Divisional Headquarters.

¹ Not reproduced.

(b) The Divisional Commander will fix the zero hour at which the re-bombardment will commence.

The normal re-bombardment will last 30 minutes, of which the last five minutes will be intensive. The bombardment will lift at 0.30, at which hour the infantry will assault.

It is to be thoroughly understood by all ranks that the only orders regarding re-bombardment that will be issued will be a message naming the hour fixed for zero (*i.e.* the hour at which the re-bombardment will commence).

(c) In the event of it being found impossible by the Artillery to begin the re-bombardment at the hour fixed as zero, either the re-bombardment will begin as early as possible after zero hour and cease at 30 minutes after zero, the last five minutes being intensive, or a fresh zero hour will be fixed.

NOTES

It is essential that all concerned make themselves thoroughly acquainted with the various objectives allotted to the attacking infantry and the successive barrages which are required. There must be no pause in the fire when lifting from one barrage line to another. Batteries firing frontally will lift 50 yards a minute, commencing at the time stated in the programme, until reaching the next barrage. Batteries firing in enfilade will move their fire gradually to the next barrage by a switch equivalent to 50 yards a minute, or, if necessary, a combination of switch and range.

It must be impressed on all ranks that a sudden cessation of fire on any trench gives warning of the attack, and that too great stress cannot be laid on the importance of keeping up a steady pace of fire which will move forward ahead of, and at the same rate as, our infantry.

As regards the ring round battery barrage areas,¹ it will be understood that the colour of the ring denotes the time at which the battery must lift off that area. Some batteries, *e.g.* the 12th Battery, fire on the same area during two periods, and therefore the ring round its area is the colour given to all batteries which lift at the end of the second period.

Similarly, the second lift of B/80 takes it on to the area upon which it remains for the last lift.

Machine gun emplacements, O.P.'s, Trench Mortars and strong points in the enemy's lines will be attacked by 4.5" Howitzers and 18-prs. using H.E. at such times as they are not engaged on other work. Table "F" of the scheme, issued on the 14th,² showed the division of the whole area between 18-pr. batteries for this purpose.

As regards Howitzers:

the 35th Battery will engage	(a) of table "F",
the 31st and D/80 " "	(b) of table "F",
and D/14 Battery " "	(c) of table "F".

¹ On tracings not reproduced.

² Not reproduced.

4.5" Howitzer Bombardment "Z" day.

Table "I"—[In this targets were allotted in detail, by trench names and map co-ordinates to the four batteries].

"A". D/14 Battery. Sunken Road Trench F.9.b.35.70—F.9.d.8.8.
&c. &c.

4.5" Howitzer Barrages "Z" day.

Table "I" (2)—[In this table targets were allotted to each battery in each ring which marked a succession of areas on the tracing (not reproduced)].

"B". Red Ring. Lift 0.15 minutes.
D/14 Battery. Area enclosed by F.9.b.35.60—F.3.d.8.1—
F.4.c.7.3—F.10.a.2.8.
&c. &c.

"C". Green Ring. Lift at 0.55 minutes.
D/14 Battery. F.9.b.3.8—F.9.b.8.1.
&c. &c.

"D". Brown Ring. Lift at 2.25 minutes.
D/14 Battery. F.9.b.3.8—F.9.b.8.1.
&c. &c.

"E". Black Ring. Until further orders.
D/14 Battery. F.9.b.3.8—F.9.b.8.1.
&c. &c.

18-pr. Bombardment and Barrage on "Z" day.

Table "J"—[In this table targets were allotted by map co-ordinates to each of 14 batteries in each ring].

"A". Start—1 hour 5 mins. Lift 0.0 mins. Blue Ring.
25th Battery. F.12.a.0.4—F.12.a.25.14.
&c. &c.

"B". Red Ring. Lift 0.15.
25th Battery. F.6.c.85.76—F.6.c.1.6.
&c. &c.

"C". Green Ring. Lift 55 mins.
25th Battery. F.6.a.95.15—F.6.a.32.20.
&c. &c.

"D". Brown Ring. Lift 2 hrs. 25 mins.
25th Battery. S.25.d.6.7—X.30.c.7.7.
&c. &c.

"E". Black Ring. Until further orders.
25th Battery. X.29.b.7.4—X.23.d.4.3.
&c. &c.

Concentrated Bombardments during "V", "W", "X" and
"Y" days.

Table "K".

Concentrated bombardments will take place at the following times. For description see below :—

"V" day 3.00 P.M.-4.20 P.M.	No. 1 bombardment.
"W" day 8.00 A.M.-9.20 A.M.	No. 2 bombardment.
"X" day 3.30 A.M.-4.50 A.M.	No. 2 bombardment.
"X" day 5.30 P.M.-6.00 P.M.	No. 3 bombardment.
"Y" day 5.00 A.M.-6.20 A.M.	No. 3 bombardment.
"Y" day 3.00 P.M.-4.20 P.M.	No. 1 bombardment.

No. 1 Bombardment.

A/80 Battery.	F.10.d.8.5—F.11.c.2.8.
&c.	&c.

No. 2 Bombardment.

C/80 Battery.	F.10.c.9.8—F.10.d.6.5.
&c.	&c.

No. 3 Bombardment.

58th Battery.	F.10.b.2.4—F.10.b.9.3.
&c.	&c.

AMMUNITION.

Table "L".

4.5" Howitzers.

For the bombardment on "V", "X", "W" and "Y" days the rate of fire will be governed roughly by the amount of ammunition allotted in "Notes on calculation for ammunition" in Scheme issued June 14th 1916.

For intense bombardments, batteries will fire at the rate of one round per gun per minute for 10 minutes, afterwards decreasing to $\frac{1}{2}$ round per gun per minute. Ammunition for "Concentrated Bombardments" (see Table "K") is not included in estimate of ammunition required for each day's bombardment.

Rate of fire for concentrated bombardment will be half the rate for intense bombardment.

In addition to tasks enumerated, the 35th Howitzer Battery will be given 750 rounds S.K. ammunition for special purposes. Instructions as to objectives will be forwarded later to the 22nd Brigade R.H.A.

Table "L" (1).

18-pounders.

During intense bombardments Batteries will fire at the rate of 1 round per gun per minute for five minutes, afterwards decreasing to half a round per gun per minute, and increasing again to 1 round per gun per minute for the last five minutes.

Instructions regarding the action of 18-prs. during discharges of gas and smoke will be issued separately, but rate of fire will be governed by the rules here laid down.

Table " M ".

9.45" Heavy Trench Mortar Bombardment " Z " day.

1 hour 5 minutes to zero.

V.7 Battery. Danube Trench from F.10.d.65.30 to F.11.a.35.00.
&c. &c.AMMUNITION. 10 rounds per gun.9.45" Heavy Trench Mortar Barrage " Z " day.

Zero to 0.10. 1 round per gun.

V.7 Battery. Hidden Lane.
&c.

0.10 to 2.25. 10 rounds per gun.

V.17 Battery. Sunken Road Trench.
&c.

Table " N ".

2" Trench Mortar Bombardment " Z " day.

1 hour 5 minutes to zero.

X.17 Battery. Front line F.9.b.6.2 to F.9.d.95.70.
&c. &c.AMMUNITION. 30 rounds per gun if possible.2" Trench Mortar Barrage " Z " day.

Zero to 0.15.

X.17 Battery. From F.9.b.6.2 to F.9.d.95.70.
&c. &c.

0.15 to 2.25.

X.17 Battery. From F.9.b.60.20 to F.9.d.95.70.
&c. &c.

THE SOMME, 1ST JULY 1916

OPERATION ORDER No. 12

BY BRIGADIER-GENERAL J. G. ROTTON, C.M.G.,
COMMANDING R.A. SEVENTH DIVISION

Headquarters R.A.,
28th June 1916.

Reference this Office G/798 of to-day's date.

Map 1A, 1. June 29th will now become "Y.1" day.
7. June 30th will now become "Y.2" day.
Sketch July 1st will now become "Z" day.
20.

2. Special attention must be paid to the following :—

- (a) The prevention of all hostile movements and work, both by day and night. Night firing must be fully maintained.
- (b) Wire-cutting on allotted tasks will be completed. Any unit whose tasks are not completed will inform this office so that batteries whose tasks are completed may be ordered to assist.
- (c) To deceive the enemy, concentrated bombardments and night raids will be continued.

When warning of patrols or raids is given on any area, batteries covering that area will lift their fire at least 300 yards behind the hostile front line.

3. Concentrated bombardments will take place :—

"Y.1" day 4.0 P.M.-5.20 P.M.

"Y.2" day 8.0 A.M.-9.20 A.M.

On "Y.1" day bombardments will be carried out as under :—

B/81 Battery, Kiel Support and Danube Support.

&c.

&c.

On "Y.2" day :—

25th Battery } Bulgar Trench F.12.a.25.10—F.11.b.50.25.
35th Battery }

&c.

&c.

The available trench mortars will join in the bombardment, paying especial attention to the saps in front of Danube Trench and all communication trenches between Danube Trench and Support, and Bulgar Trench and Support.

4. RATE OF FIRE—

18-prs. and 4.5" howitzers : One round per gun per minute.

Ammunition : High Explosive.

2"-Trench Mortars : 15 rounds per mortar per bombardment.

5. Two 6"-howitzer Batteries will take part in each bombardment.
6. During these bombardments all batteries not engaged therein will carry on the usual steady bombardment of strong points or wire allotted to them.
7. (a) Night firing will be carried out as laid down in "Scheme for Preliminary Bombardment" and this Office C/761 dated 23/6/1916.
(b) A/81, B/81 and C/81 batteries will move to forward positions on "Y.2" night.

On "Y.2" night, night firing tasks of these batteries will be carried out by other batteries as laid down in C/761 and "Scheme for Preliminary Bombardment" for "Y" night.

S. A. BODDAM-WHETHAM, Captain R.A.,
Brigade Major R.A. 7th Division.

THE SOMME, 1ST JULY 1916

20TH BRIGADE INSTRUCTIONS FOR FORTHCOMING OPERATIONS

H.Q. 20th Inf. Bde.,
17th June 1916.

I. INTENTION.

Sketch
20.
Map 1A,
7.

(a) In conjunction with the French who are operating from Maricourt southwards the Fourth Army is about to assume the offensive.

(b) The attack will be developed to the north and south of Fricourt Village and Fricourt Wood by the 21st and 7th Divisions respectively, with the object of isolating the triangle formed by these localities, which will be afterwards dealt with in a subsidiary operation.

(c) The task of the 7th Division is to clear the trenches in front and seize and occupy the spur from the track at S.25.b.58.32. to Willow Avenue at X.29.b.5.6.

(d) Immediately on the right of the 7th Division the left brigade of the 18th Division will advance simultaneously and prolong the 7th Division line towards Montauban. The left of the 18th Division will be in the trench running from S.25.b.36.90 to S.25.b.90.45.

(e) On the left of the 7th Division, advancing on the north side and clear of Fricourt village and wood will be the 21st Division with their right on Fricourt Farm. That division will join hands with the 7th Division at Willow Avenue X.29.b.5.6. and prolong the line northwards through the Quadrangle towards Contalmaison.

Boundaries. Between 7th and 18th Divisions—F.12.c.3.9. to F.6.a.62.11.—track at F.6.a.8.9.—thence along track to junction of tracks at S.25.b.45.00.—S.25.b.37.91. Between 7th and 21st Divisions—the Willow Avenue Stream.

II. 7TH DIVISION PLAN.

(a) *Distribution.* The 7th Division will be distributed as follows:—
On the right: the 91st Infantry Brigade from F.12.c.3.9. to F.11.d.2.7. In the centre: the 20th Infantry Brigade from F.11.d.2.7. to F.10.c.65.35. (east end of Bois Francais craters).

On the left: the 22nd Infantry Brigade less 2 battalions and two sections M.G. Company F.10.c.65.35. to F.9.a.62.58.

(b) **Main Attack.** The main attack will be carried out by the 91st and 20th Infantry Brigades.

(i) The dividing line between the 91st and 20th Infantry Brigades will be—from our trenches at point F.11.d.2.7. to the road junction F.5.c.45.35. in Mametz immediately south of the church—thence along the road running northwards past the church to the northern outskirts of the village (road inclusive to 20th Inf. Bde.)—thence to the eastern edge of Bunny Wood.

(c) **Subsidiary Attack.** The subsidiary attack will be carried out by the 22nd Infantry Brigade who will clear the German trenches north of Bois Francais at an hour to be decided later when the main attack has reached its final objective. This operation will take place in conjunction with 2 battalions of the 50th Infantry Brigade who will clear Fricourt Village and Wood.

III. 91ST INF. BDE. ATTACK.

The attack of the 91st Infantry Brigade will be divided into three phases, the completion of each phase being marked by the capture and consolidation of a definite objective.

The first objective will be the seizure of Bucket Trench—Bulgar Alley to Danzig Alley, Danzig Alley and the northern and north-eastern edge of Mametz.

The second objective will be Fritz Trench, Valley Trench, and Bunny Alley.

The third objective will be the whole of the final objective allotted to the division.

IV. OBJECTIVE OF 20TH INF. BDE.

The object of the 20th Inf. Bde. will be to form a defensive flank facing north-westward to cover the advance of the 91st Inf. Bde. Its objective is the line from the bend in Bunny Trench F.5.c.35.90 (road inclusive) along Bunny Trench to M. in BM 90.0—thence along sunken road to junction of Orchard Trench North with Orchard Alley—Orchard Alley to junction with Apple Alley—then along Apple Alley to the small salient in our present line at F.10.c.7.4.

V. ARTILLERY.

(a) A preliminary and continuous bombardment will be carried out on — days. Hostile wire will be cut on all — days.

(b) During the advance of the infantry a barrage of artillery fire will be formed in front of the infantry according to the timings shewn on the tracings issued to those concerned. The lines shewn on the tracings indicate the nearest points on which guns will fire up to the hour indicated. At the times shewn heavy guns will lift their fire direct to the next barrage lines. The divisional artillery will move their fire progressively at the rate of 50 yards a minute.

Should the infantry arrive at any point before the time fixed for the barrage to lift they will wait under the best cover available or lie down in the open, and be prepared to assault immediately the lift takes place.

This method is to be most carefully and thoroughly instilled into every officer and man taking part in the attack prior to the brigade moving into the trenches.

(c) The divisional artillery co-operating with the brigade is :—

A. Group : C.O. Lt.-Col. Stanley Clarke, D.S.O. H.Q. with 20th Inf. Bde.

F. Battery R.H.A.

T. Battery R.H.A.

B/81 Battery (17th Div.).

C/81 Battery (17th Div.).

D/14 Battery R.H.A. (4.5-inch Hows.).

(d) Heavy and Medium Trench Mortars.

The heavy and medium Trench mortars co-operating with the brigade will be organized as a group divided into two sub-groups.

C.O. Captain MacNaghten, R.A. H.Q. with 20th I. Bde.

Two heavy batteries.

Four medium „

(e) Instructions as to Re-bombardment.

(i) If any point or part of the enemy's lines holds up our infantry advance to such an extent that it is necessary to bombard again that portion of the enemy's defence, application for re-bombardment must be made to brigade headquarters and the sanction of the G.O.C. division obtained. This application will only be entertained in most urgent necessity owing to the general disarrangement caused thereby.

(ii) The divisional commander will fix the zero hour at which the bombardment will commence. The normal re-bombardment will last 30 minutes of which the last five minutes will be intensive. The bombardment will lift at 0.30, at which hour the infantry will assault.

It is to be thoroughly understood by all ranks that the only orders regarding re-bombardment that will be issued will be a message naming the hour fixed for zero (i.e. the hour at which the re-bombardment will commence).

(iii) In the event of it being found impossible by the artillery to begin the re-bombardment at the hour fixed as zero, either the re-bombardment will begin as early as possible after the zero hour, and cease 30 minutes after zero, the last five minutes being intensive, or a fresh zero hour will be fixed.

VI. PRELIMINARY MOVES.

Battalions of the brigade will be withdrawn from the trenches previous to the bombardment and the line will be held by one battalion of the 17th Division. G.O.C. 20th Inf. Bde. will remain in command of the line. H.Q. Grovetown.

On the day previous to the assault one company of each of the three assaulting battalions will take over the areas allotted to them, and the battalion of 17th Division holding the line will be withdrawn prior to the remainder of the brigade moving up.

Orders and march tables for these moves will be issued separately.

VII. CUTTING OF OUR OWN WIRE.

All obstacles to movement in our own lines other than wire will be filled in before the brigade leaves the trenches. O.C.'s battalions will be held responsible that this has been done in the areas over which their battalions will pass. They will demand working parties

if necessary to complete the task, and will report to brigade headquarters before leaving the trenches that all is correct.

Our wire will be cut during the bombardment on the night before the Assembly march. Each battalion will detail parties to cut the whole of the wire in their areas. The work should be thoroughly completed that night. O.C. Battalions on again going into the trenches will satisfy themselves that the work has been thoroughly done and if not complete will complete it immediately it is dark and will report completion to brigade headquarters.

VIII. COMPOSITION OF ASSAULTING COLUMNS.

The assault will be carried out by three battalions. 2/Gordons on the right, 9/Devons in the centre, 2/Borders on the left. 8/Devons and 1 section 95th Field Coy. R.E. in brigade reserve.

IX. FORMING UP POSITIONS.

The following trenches are allotted to battalions for forming up:
2/Gordons. Fire trenches F.114. F.115.

Stafford Street.

London Road.

Queens Road and 67 Support.

N.B. The boundary on the right is where Stafford Street joins Manchester Avenue. On the left the railway inclusive.

Battalion H.Q. at junction 66 Street and 67 Support.

9/Devons. Fire trenches F.117, F.118.

Reserve Trench from Dale Street to 70 Street.

Duke Street.

Battalion H.Q. at junction of 69 Street with Reserve Trench.

2/Borders. Fire trenches F.101, F.102, F.103.

Reserve Trench from 70 Street to Albert St.

Albert Street.

Battalion H.Q. junction of 71 Street and Support line.

8/Devons. Lord Street.

Bold Street.

Suffolk Avenue.

Ludgate Circus.

Battalion H.Q. Brigade S.A.A. Store.

X. METHOD OF ASSAULT.

The assault will be carried out steadily behind the artillery barrage. At the hour named for the barrage to lift the leading line will be as close to the hostile position as possible, and on the barrage lifting will at once move forward steadily, keeping touch, and only halt and lie down when next compelled to do so by awaiting the lift of the artillery barrage.

The leading line will be strong enough for the purpose required, and will move straight forward to the final objective of the brigade. Succeeding lines will follow at a distance of not less than 100 yards and not more than 150 yards—will halt when the line in front of them halts, and will reinforce only where the line in front requires reinforcements to carry out its task, or to cover the whole frontage allotted as it increases in length. The lines must not be allowed to become prematurely merged into one another.

One company will be kept in battalion reserve moving as the last line.

The assaulting battalions on arrival at their final objective will consolidate it. It is not intended to consolidate each line as captured. Should some part of the assaulting lines be held up, the remainder will render them the best assistance by advancing to their final objective. The flanks so exposed must however be specially guarded until those parts which have been held up have come into line.

The position of leading lines of assaulting troops will be denoted by smoke candles.

Battalions will move in immediate touch with each other with the exception that there will be a gap, in the valley through which the road and railway runs, between the 2/Gordons and 9/Devons. This gap will be closed on reaching Shrine Alley by the O.C. 9/Devons extending to his right until close touch is gained. 2/Gordons will advance in touch with left of 1/South Staffords of 91st Inf. Bde.

XI. "MOPPING UP".

Special parties will be detailed by each battalion to "mop up" each hostile trench passed over. This party will consist in each case of a bombing section with an infantry section attached. It is imperative that immediately the barrage lifts these parties commence work so that no machine guns or snipers are allowed to get into action. No other men are to be allowed to enter or remain in the hostile trenches passed over. The "mopping up" parties will work inwards until touch is gained with the next "mopping up" parties, so as to ensure that no part of the trench is left unsearched.

XII. BOUNDARIES BETWEEN ASSAULTING BATTALIONS.

The boundaries between assaulting battalions are as under, each of the assaulting battalions being responsible for the capture and clearing of all trenches within its boundaries, and leading forward from its objective to the hostile trenches.

(N.B.—Papen Trench to 2/Borders).

Special blocking parties detailed for each forward communication trench will move with the last line.

The responsibility for dealing with the dug-outs and trenches in the high bank west of the railway rests with the 9/Devons. East of the railway to 2/Gordons. Specially detailed bombing parties must be told off to work on the flanks of both these battalions to work outwards until touch is gained with one another whilst crossing the ground where a gap exists between the two battalions, *i.e.* up to the Shrine Alley line.

Dividing line between left battalion, 91st Infantry Brigade and 2/Gordon Highlanders.

From our front trenches at the junction of F.11.3. and F.11.4. a straight line to the road junction in Mametz immediately south of the church—thence along the road running northwards past the church to the northern outskirts of the village (road inclusive to 2/Gordon Highlanders)—thence to eastern edge of Bunny Wood.

Between 2/Gordon Highlanders and 9/Devon Regt.

From our front line at junction of F.11.5. and F.11.6. along the railway as far as Halt at point at which Shrine Alley cuts the railway

(railway to 2/Gordon Highlanders)—thence to junction of Cemetery Trench and Danzig Alley (Danzig Alley to 9/Devon Regiment)—thence along Danzig Alley to junction in the Orchard Trench South (both to 9/Devon Regiment)—thence to road at B in BM.

Between 9/Devon Regiment and 2/Border Regiment.

From our front line at junction of F.11.8. and F.10.1.—a straight line to the bifurcation of Swag Lane—along Swag lane (Swag Lane inclusive to 2/Border Regiment)—thence a straight line from junction of Swag Lane and Tirpitz Trench to junction of Apple and Orchard Alleys.

XIII. ACTION OF RESERVE BATTALION.

At the zero hour the 8/Devons will commence to move as follows :—

1 company via 69 Street to reserve trench west of 69 Street.
1 company „ 68 „ to reserve trench between 68 and 69 Street.
2 companies via Suffolk Avenue to 67 Support and Queens road.
Battalion H.Q. to headquarters allotted to 9/Devons at junction of Reserve Trench and 69 Street.

A battalion of the divisional reserve will at the zero hour move up the Lucknow Avenue from Lucknow Redoubt to the forming up trenches vacated by the 9/Devons.

XIV. MACHINE GUN COMPANY.

Two sections will be in the trenches during the preliminary bombardment and will carry out night firing to prevent any repair work and will also take part in the auxiliary attacks. Separate orders for these operations will be issued.

On the night preceding the assault all guns will move into their battle positions as follows :—

One Section will cover the advance of the 2/Gordons. They will open rapid fire at 8 minutes before zero on Mametz Trench and Mametz support, continuing with bursts to the zero hour when they raise their fire to Mametz Support, and thence by stages to Cemetery Trench and Mametz.

When our troops have reached their objectives or fire is no longer helpful the guns will move forward and be placed in the following positions :—

No. 1 Gun at junction of Orchard Alley and Orchard Trench North.

No. 2 Gun in Sunken Road near the junction of Rose Trench and Orchard Alley.

No. 3 Gun in Apple Alley about 100 yards from its junction with Orchard Alley.

No. 4 Gun about 100 yards due south of No. 3 Gun, down Apple Alley to fire N.N.W. towards Rose Cottage.

One Section will cover the advance of the 9/Devons and 2/Borders. They will open fire at 8 minutes before zero on Danube Trench and the saps leading from it. At zero hour they will lift direct to Shrine Alley and from there to Hidden Wood.

When their fire is no longer useful the guns will move forward to Danzig Trench near its junction with Shrine Alley. The guns

will then be placed in commanding positions on the high ground as follows :—

Nos. 1 and 2 to cover ground beyond Apple Alley.

Nos. 3 and 4 to cover ground in front of Fricourt Wood.

One Section, Two guns in position in Caftet Wood to assist advance of 2/Gordons and 9/Devons by bringing fire to bear on the bank on the west of the railway, and on the trenches in the vicinity of the Halt. They will then raise their fire by stages on to Cemetery Trench—Danzig Alley and Mametz. When our troops have reached their objective these two guns will rejoin the other two guns of the section in brigade reserve.

One Section in brigade reserve in deep dug-out at junction of Albert Street and Essex Avenue. It will be ready to move forward, when the brigade has reached its final objective, as follows :—

No. 1 Gun in Bunny Trench at F.5.c.35.90. to fire west.

No. 2 Gun in Bunny Trench at F.5.c.0.7. to fire north.

No. 3 Gun in Bunny Trench north of Sunken road to fire north.

No. 4 Gun in Bunny Trench at the north end of Orchard Trench south to fire along Sunken road.

XV. TRENCH MORTARS.

The heavy and medium trench mortars are carrying out their programme in conjunction with the divisional artillery under the orders of the B.G.R.A. 7th Division. They will raise their barrage in conjunction with the divisional artillery.

Stokes Mortar Batteries. Separate orders are being issued as to their action during the preliminary bombardment and auxiliary attacks to be delivered during that bombardment.

On the evening preceding the assault the batteries will move into their battle positions as follows :—

One Section 20th Stokes Mortar Battery will be in position to cover the advance of the 9/Devons.

One Section 20th Stokes Mortar Battery will take up a position to cover the advance of the 2/Borders.

One Section 51st Stokes Mortar Battery will take up a position to cover the advance of the 2/Gordons.

One section of the 22nd Trench Mortar Battery will come under the orders of G.O.C. 20th Inf. Bde. and will take up its positions to bring fire to bear on the enemy's trenches west of point F.10.d.2.5.

At 2 minutes before zero hour and continuing without cessation to the zero hour all guns will deliver a hurricane bombardment of the enemy's front line and support trenches in their respective areas where within range. The fastest rate of fire possible will be developed. The last minute of this bombardment will be concentrated on the hostile front line and will then lift for one minute after zero on to the hostile support line.

Two guns of the section of the 20th Stokes Mortar Battery covering the 9/Devons will then advance via Danzig Trench or Coombe Alley to Shrine Alley above the Halt to assist the further advance of 2/Gordons and 9/Devons if required. The other two guns of this Section will stand by ready to follow if required.

Two guns of the section 20th T.M.B. covering 2/Borders will similarly follow 2/Borders moving via Mushroom Alley and Kiel Support. The other two guns will stand by ready to advance if required.

The section 22nd Stokes Mortar Battery will cover the advance of the 2/Borders from the positions already prepared. As soon as the 2/Borders have reached their objective this section will return to the command of the G.O.C. 22nd Infantry Brigade.

The section of the 51st Stokes Mortar Battery will not advance, but will subsequently receive orders to join its own brigade. O.C. 9/Devons and 2/Borders will provide a carrying party for bombs for their respective sections as they advance.

During the hurricane bombardment the 51st Stokes Mortar Section will pay very special attention to that portion of Mametz Trench F.11.a.40.05—F.11.c.8.9.

XVI. CONSOLIDATION OF POSITIONS CAPTURED.

Immediately the objective is reached the infantry will commence to consolidate the positions. In addition to the ordinary consolidation to be carried out, the following strong points will be at once established :—

2/Gordons. F.5.e.35.90.

F.5.e.0.7.

F.4.d.80.35, i.e. Point at which Bunny Trench crosses the Sunken road.

9/Devons. Junction of Orchard Trench and Orchard Alley.

Junction of Rose Trench and Orchard Alley.

Point at which Orchard Alley crosses Sunken Road.

Junction of Apple and Orchard Alleys.

2/Borders. Trench junction F.10.a.51.11.

Junction of Bois Francais Support and Apple Alley.

Junction of Bois Francais Trench and Apple Alley.

In addition the 95th Field Company R.E. less one section and one company Divisional pioneer battalion will move forward subsequently under orders from divisional headquarters to place Mametz Village in a state of defence.

O.C. Battalions will arrange to send up any material that they may require for making the strong points allotted to them. In the first instance pick and shovel only will be required.

In each strong point there will be at least one Lewis gun.

XVII. COMMUNICATION TUNNELS.

A communication tunnel running from our front line near 66 Street to Mametz Trench will be opened up at the earliest opportunity under divisional arrangements and a party detailed for this duty will then open up a communication trench from the head of this tunnel to the Halt, thence via Danzig Alley to Mametz.

The O.C. Tunnelling Companies are arranging for the opening up of the communication tunnels from head of 71 Street to Danube Support, and from 75A Street to Kiel Support (on both sides of the B. Francais craters), and for the management of traffic passing through.

The O.C. Tunnelling Companies are also arranging to explore all the hostile mine heads as early as possible after their capture, and to form communication trenches.

XVIII. THE SUBSIDIARY OPERATION.

Whilst the 20th Inf. Bde. is holding strongly the objective allotted to it and at an hour to be ordered by the corps commander, probably when the final objective of the main attack has been reached, the 22nd Inf. Bde. (less 2 battalions in divisional reserve) with one battalion in front and one in brigade reserve will advance with its right on the Bois Francais craters and will capture the Rectangle—Aeroplane Trench and Sunken road Trench. Pushing forward 2 companies with left on Thorn Trench and right on Orchard Alley it will occupy Rose Trench from its junction with Orchard Alley where it will be in touch with the 20th Inf. Bde. to Point F.4.e.3.6. where it will gain touch with the right battalion of two battalions of the 50th Inf. Bde. who will have advanced simultaneously through Fricourt Village and Wood. A third company 22nd Inf. Bde. will advance across the Bois Francais craters, clear Bois Francais Trench and Bois Francais Support from the point where it joins Orchard Alley to point 4385 (on 1/5,000 Map, Fricourt) where it will gain touch with the 2/Borders who will bomb down to assist it. The third company of the 22nd Inf. Bde. will then send a bombing section supported by an infantry section to clear Orchard Alley till it gains touch with the 9/Devons. The company will then occupy Papen Trench in support of the leading companies.

To cover the whole of this operation a special artillery bombardment will be carried out as follows :—

<u>Time.</u>	<u>Areas to be bombarded.</u>
0.30—0.0.	The whole area to be attacked by the two divisions.
0.0.—0.15.	Area within line running from F.4.b.2.7. along S.E. edge of Fricourt Wood to F.3.d.9.9. thence along curved road to F.3.b.7.2.—north along edge of wood to F.3.b.9.8.—thence in a straight line to re-entrant at X.28.c.98.15.—thence to point F.4.b.2.7.
0.15.—0.30.	Area within line running from F.4.b.2.7. along S.E. edge of Fricourt Wood to F.4.a.20.05.—direct to F.3.b.9.6. along trench to road at F.4.a.02.80. thence east to re-entrant at X.28.c.98.15. thence to point F.4.b.2.7.

The infantry and machine guns of the brigade will be ready to co-operate and take advantage of any targets presenting themselves during this bombardment.

As soon as this operation is completed the 22nd Inf. Bde. will send parties to clear the Orchard, Orchard Trench North and Willow Avenue. At the same time the 9/Devons will work along Orchard Trench North from the south end to assist, and the 2/Gordons will occupy Bunny Wood and consolidate it as a strong point in which task it will be assisted by the 95th Field Company R.E. Two guns of the 20th Inf. Bde. M.G. Company will be moved into this strong point.

XIX. CONCLUDING OPERATION.

When the 22nd Inf. Bde. has captured and occupied Orchard Trench North and the Orchard where it will be in touch with the 50th Inf. Bde. on the left occupying Willow Trench, the line Orchard Trench North—Orchard will be taken over and strongly consolidated by a battalion of the 20th Inf. Bde. to be named at the time—8/Devons if available. For this consolidation one section 95th Field Company R.E. will be employed. The Orchard will be made into a strong point.

The position of the brigade will then be :—

2/Gordons holding and consolidating their original objective with a strong point in Bunny Wood. A second battalion prolonging the line via Orchard Trench North and the Orchard to the Willow Avenue Stream near the Orchard where it will be in immediate touch with the 50th Inf. Bde. prolonging the line along Willow Avenue through Fricourt Wood. The right of the 2/Gordons will be in touch with a battalion of the 91st Inf. Bde. (South Staffords).

The whole will then form a second line behind the objective assigned to the XV Corps for the first day's operations with a line of strong supporting points between the first and second lines.

Two battalions of the brigade will be withdrawn to form a brigade reserve in trenches to be named at the time.

XX. SMOKE ATTACK.

Provided the wind is favourable a smoke attack will be made on that portion of the front which is not being attacked by infantry with the object of :

- (i) Preventing the enemy in the isolated area from observing the progress on either flank or from impeding our infantry advance.
- (ii) Drawing the attention of the enemy artillery away from the points in our front line from which our infantry will issue.

The attack will be made from the junction of trenches F.9.1. and F.9.2. to the left flank of the division. The smoke must, however, be arranged so that no smoke drifts east of the line Orchard Alley, or north of the line joining Fricourt Church and the N.E. corner of Fricourt Wood. This attack will be made on the day of the assault at 5 minutes before zero and will last one hour.

The following special barrages will be formed by No. 3 Company, No. 5 Battalion Special Brigade R.E. as are possible within the limits defined in the Table below, having regard to the wind prevailing at the time. These barrages will start at four minutes before zero :—

<u>Barrage.</u>	<u>Purpose.</u>	<u>Limits.</u>
No. 1.	To screen troops advancing west towards Apple Alley (F.10.a.68.76—F.10.e.6.7) from enemy in Kiel Support and Bois Francais Support.	<ol style="list-style-type: none"> (i) Most eastern limits Shrine Alley (F.10.d.4.6—F.10.b.90.28). (ii) No smoke to be east of Shrine Alley at 0.10 mins. (iii) No smoke to be east of Hidden Wood at 0.15 mins. (iv) No smoke to be east of Apple Alley at 0.20 mins.

- No. 2. To screen troops advancing west towards Apple Alley from enemy at Orchard Alley and the spur west thereof.
- (i) No smoke to be east of Apple Alley at 0.20 mins.
 - (ii) Barrage on Orchard Alley is required until 0.30.

XXI. GAS.

On the day of assault provided the wind is favourable whiffs of gas will be turned on at 15 minutes before zero from the portions of the front line lying between the junction of the trenches F.9.1. and F.9.2. and the Tambour.

No whiffs will be discharged after five minutes before zero, nor will gas be discharged from other portions of the front.

XXII. REPORTS.

Brigade H.Q. will remain at Essex Avenue.

C. J. DEVERELL,
Br.-General.

